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ABSTRACT

This study compared the effects of group day care, family day care, and full parental care on such aspects of children's social-emotional adjustment as curiosity, attachment, self-concept, sex role, achievement motivation, impulse control, cooperation, and sharing. Initial differences between groups were controlled by matching on race, sex, number of parents in the home, number of siblings, and mother's education. Data on the 282 4-year-olds participating were gathered in three ways: (1) interviews with the mothers concerning their attitudes toward their child and their child rearing practices, (2) observational behavior ratings of the child by the primary caretaker and (3) games and tasks designed to elicit samples of particular types of behavior in a laboratory setting. Some of the trends observed in the data were: (1) family day care may tend to foster curiosity, independence, and delay of gratification; (2) home-rearing may allow girls more freedom to express interest in opposite sex toys and activities; (3) late entry into a center may lead to increased parent orientation; and (4) day care experience may decrease the tendency for children to overestimate their abilities in selecting both physical and academic tasks. The overall results of the project, however, suggested that day care experience did not produce outcomes that were markedly different from home experience outcomes. (JMB)

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SOCIAL-EMOTIONAL EFFECTS OF DAY CARE

Final Project Report
June, 1974

Prepared
by

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CHAPTER 1

INTRODUCTION

The phrase "day care" has come to have many meanings and to arouse strong reactions, some positive and some negative. Many women view day care as a necessity in the fight for equal rights and opportunities in the employment world. Others also see day care as a necessity, but for different reasons. They view day care as the only possible solution to child care while they earn a living for the family. Day care enters into the lives of other women in quite a different way. As the caretakers, it provides them with a source of income without leaving their home and children.

Still other mothers view day care as the worst possible fate that could befall them or their children. These mothers believe strongly that the mother's place is in the home with her child. Dire consequences are envisioned for the day care child. To the educator, day care has yet an entirely different meaning. Teachers view day care as an opportunity to provide children with the opportunity to learn to manage social relationships and to acquire skills prerequisite to success in school. From the perspective of some governmental agencies, day care is viewed as an opportunity to improve the environment of children from economically and educationally impoverished homes.

Needless to say, most opinions about the value of day care for children are clouded by the "cause" or need of the adult. The child is often the last consideration. But even if a mother or teacher is concerned about the impact of day care on the child, relatively little information is available. There have been few systematic attempts to study the characteristics of day care situations or to study the impact of various types of care settings on child development. Particularly small is the number of studies which have focused on the social-emotional aspect of development. Partly because research tools are somewhat better developed for assessment of cognitive skills and partly because of the preacademic thrust of programs such as Head Start, more emphasis has been placed on the influence of preschool programs on cognitive abilities. Even those studies, however, typically evaluated the impact of special programs, not the everyday day care setting. Because of the emphasis during the last decade or so on educational preschool programs, many parents have been led to assume that all group day care settings provide quality preschool programs that are by definition better than what the child would receive at home. Similarly many parents assume that the group setting will provide invaluable socialization training. The child will learn to get along well with age-mates.

That day care is not a unitary concept or experience has been documented by Prescott, Jones, and Kritchevsky (1967). The basis for this assertion came from an intensive study of 50 day care centers in the Los Angeles area. They observed teachers, children, facilities, and programs in typical centers, both public and private. Based on time sampling over a 10 day period in each center they found marked differences among the centers in such features as teaching style, training of staff, quality of physical space, and child response. They found that children's interest and involvement in the programs was related to the flexibility of the program as well as to the sensitivity of the teachers and child-centeredness of the approach. The results of their observations would suggest that the university based centers which have been the source of most evaluation studies of day care are probably not typical centers. Few, if any, non-university centers have as favorable staff-child ratios, trained staff, or well-planned programs. The results of studies based on comparison of children in the model centers with control groups must be interpreted strictly within the context of the day care environment offered in the model center. Generalization to the typical setting may be misleading.

In a more recent summary of their observations of day care settings, Prescott and Jones (1971) discuss some of the assets and liabilities of group day care as a child-rearing environment. They question the assumption that group day care can meet all the needs of children. They note, for example, that despite the fact that the group setting encourages independence from the adult by virtue of there being less access to an adult, children in centers usually are under the constant surveillance of an adult unlike children at home. There is little privacy for the child from either children or adults. This lack of freedom may reduce a child's opportunities to truly explore his own capabilities. Along the same line, the authors also suggested that because individual attention is limited in the center, children may not receive sufficient encouragement in their attempts at a new activity. They fear that some of the impetus for growth stemming from adult interest in the child will be lost.

The rigid scheduling of activities and lack of choice in many centers was also noted as a possible disadvantage of the day care center in providing balance of experience. While predictability has its place in giving some order and security to the child's life, it may be overdone, particularly in large centers which have many children and adults to coordinate. Prescott and Jones argue that a part of learning to cope with everyday living is to encounter the unexpected, to deal with a wide variety of situations. Some centers tend to insulate children from any disorder, even to the extent of avoiding possible encounters with dirt, stones, trees, and ants in the play yard.

Despite the finding that the good center can provide a greater variety of play materials and equipment than found in most homes, not all learning opportunities are necessarily centered around planned pre-academic "school" activities. The authors question whether the "nursery school" model is the best for meeting all of the child's needs, particularly when the child spends a full day in the setting. They suggest that perhaps family day care or a combination of family day care and nursery school are options that should be explored. With some training many day care mothers might be able to combine mothering and teaching roles in a more informal, flexible atmosphere.

Goals of Present Study

The major goal of the present study was to extend the Prescott and Jones contribution to our understanding of the characteristics of the typical day care setting by assessing the impact of typical day care settings on several aspects of social-emotional development. In an attempt to provide information about the influence of day care based on a "nursery school" model and day care based on a home model, children in both group and family day care settings were sampled. It was expected that children's response to maternal separation and their subsequent social-emotional development would be affected by the form of substitute care provided. To fully appreciate the possible differential influence of the two care experiences, comparison with a sample of home-reared children was viewed as essential. Most parents, teachers, pediatricians, psychologists, and politicians in the United States view the home as the optimal environment for normal social-emotional development. Only the mother can serve as the catalyst for healthy emotional development. Accordingly, comparison of the outcomes of day care settings with those of the home setting is important to provide a perspective for interpretation. For example, if a higher proportion of emotionally disturbed children were found in group care than in day care homes, we would want to know how that proportion compared with a home-reared group. By inclusion of the home-reared group we would be able to say whether the group experience had increased the frequency of emotionally disturbed children or whether the family day care experience was associated with infrequent emotional disturbance.

With the exception of a recent study by Winett, et al. (1974) the authors were not aware of a study which combined the following features: (1) focus upon a cross-section of four year olds in typical (rather than model) day care settings; (2) comparison of family day care as well as center children with a matched home-reared sample; (3) examination of the influence of as many as five years in day care and as few as one in the same study; (4) a comparison of attitudes of the mothers of children in day care and non day care groups.

For comprehensive reviews of previous research dealing with the influence of maternal employment and/or day care on the family and on children, the reader is referred to Caldwell (1973), Grotberg (1971), Hoffman (1974), Siegel and Haas (1963), Stolz (1960), and Wallston (1973).

Investigator Bias.

Often the discussion of the effects of maternal employment and/or day care on children has taken place within the framework of the maternal deprivation literature. (cf., Wallston, 1973). In such a context separation is equated with deprivation. The outcome for the children in such a context can only be negative, that is, lead to emotional disturbance, flattened emotion, and delinquency. The assumption was made in conceptualizing the present study that day care may have some advantages and some disadvantages over home-rearing with respect to social-emotional development. Which mode of rearing produces a desirable outcome will depend on individual definition of the adjusted child, on the adequacy of the parental home or day care setting in providing the support for each definition of the adjusted child, and of course, on the particular child. In other words, we assumed that not all outcomes are viewed as equally desirable by all parents and teachers, that situations within a care mode will differ markedly in the kind of environment they provide, and that not all children will respond identically to similar experiences. Accordingly, we began with the bias that there will be assets and liabilities associated with each care setting: group day care centers, family day care homes, and full parental care.

Consistent with Moore (1969), we prefer to view the outcomes of various care experiences as indicating "contrasting trends of personality development rather than degrees of disturbance" (p. 244). The goal of the project was to obtain data which would allow us to characterize some of the contrasting trends in development associated with experience in a center, family day care home, or in full parental care.

It should be noted that centers and day care homes do not exhaust the child care arrangement for working mothers. According to the Westinghouse-Westat (1970) day care survey only about 34% of children under six years of age with working mothers were in formally recognized centers of family day care homes. A large number of children are cared for in their own homes by a relative or paid babysitter or in someone else's home on an informal basis. At least among family with incomes under $8000 the extended family provided day care for more than 50% of the children. Children cared for on an informal basis by a relative or friend were not included in the present study. One would expect, however, that some of the advantages and most of the disadvantages of the formal family day care setting would be minimized.

Problems of Interpretation.

Control. Many problems are associated with research on global variables such as maternal employment or day care. One of the most serious problems involved in a study of the social-emotional effects of day care is evident in the previous paragraphs. Day care is a global variable encompassing several other factors such as maternal employment, substitute care, multiple caretaking, maternal separation, and many other variables. Although we purport to be studying the influence of day care experience on social-emotional development, these other variables are necessarily confounded with day care. Because it was not possible to study the impact of day care by randomly assigning children to a care experience, we had to live with thos confounding by being cautious in interpretation of the results of comparisons. The reader should remain aware that we are exploring the relationship between day care and child behavior throughout the report, not identifying "causal" factors.

Another problem of interpretation arising from the use of field rather than experimental data was the unknown selection bids. We did not know what led parents to select a particular mode of care nor did we know how many potential subjects did not "last" the nine month minimum that we established in defining day care experience. It can probably be assumed that parents would have made alternative arrangements by that time if there was clear evidence of poor adjustment of the child to the center or day care home setting. It should be noted that it was not a requirement in the present study that children have been in the same center or day care home for the nine month minimum but that they have been in the same care mode.

Sampling. Frequently it is difficult to generalize on the basis of research dealing with maternal employment or day care because the sample was purposely a select problem group, because no effort was made to systematically sample from representative groups, or because the attempt to match day care and control subjects on family and economic variables placed constraints on the sampling. There is some difference in opinion of what is the most fruitful strategy of research in this area. Stolz (1960) emphasized that without control for the personality of the mother and family circumstances, interpretation of differences in the characteristics of children in substitute care is virtually impossible. She would view matching as essential. It should be noted that studies assessing the effects of demonstration day care programs such as the Children's Center, Syracuse and the logitudinal study under Kagan's direction at Harvard have employed matched home-reared controls for their evaluation studies. Wallston (1973), however, points out that matching is not the whole answer to interpretation problems. By matching, the possibility of detection of an interaction between maternal or family variables and day care and/or maternal employment is eliminated. She suggests that it would be desirable to treat these variables as interacting independent variables. Such a solution would require a very large sample in order to ensure sufficient representation in each subcategory.

In the present study a compromise between the Stolz and Wallston approaches was attempted. Subjects were matched on several variables known to be related to several of the task measures: mother's education, number of siblings, number of parents in the home, sex, and race. On tasks where we had some reason to assume that care mode might interact with one of the matching variables, we included the variable as a factor in the analysis to allow for assessment of the interaction component.

We were particularly interested in whether number of parents in the home might interact with dav care experience on measures of sex role preference and self-concept. Since a disproportionate number of the users of dav care are from single parent homes, assessment of the influence of day care for that subgroup was considered to be valuable. Does the day care setting provide for some of the child's needs that the mother alone is unable to meet or does the daily separation compound the influences of father absence (particularly in cases where the child remembers the father's leaving)?

Although no attempt was made to match children in the present study on the basis of maternal attitudes toward parenting and children-rearing practices, we were concerned that the mothers of day care children might be quite different from mothers of home-reared children. For example, the mother who works or goes to school presents a somewhat different role model to the child than the housewife and may be less reinforcing of stereotyped roles for both boys and girls. She may, accordingly, be more demanding of her child, particularly a girl, on educational and achievement oriented tasks. Hoffman's (1974) recent review of the effects of maternal employment on the child does suggest that there is some basis for that assumption. The only study cited which included young children (9-12 years of age) did find that the children of working mothers showed higher achievement motivation.

Another dimension on which one might expect mothers of day care and non-dav care children to differ is child-centeredness, i.e., the extent to which they believe that having children has altered their lifestyle, the protectiveness of the mother, and the extent to which the mother babies the child would be expected to differ. The mother who must be at school or work early each day may not have time to help him dress, eat, and pick up toys. Several studies reviewed by Hoffman examining independence training of the working and non-working mother revealed that the working mother required children to take more household responsibilities and were likely to stress independence. These studies, however, focused on considerably older children than included in the present study. At the preschool age the influence of maternal employment on independence training may be quite the opposite of that found with older children. At an age where getting dressed and eating are not entirelv automatic, the working mother mav be inclined to do it for the child rather than go through the sometimes lengthy process of letting the child try to figure out which is the front of the shirt, etc. The patience required of the mother at that stage to allow for independence may not be as frequently found among the working mothers.

To examine the possible confounding of day care and mother attitude in the present study, the following strategv was employed. Mothers of participating children were interviewed and the care groups compared on several clusters of maternal attitudes. The cluster scores derived from the mother interviews were also included in a correlation matrix with task measures. In cases where both a care group difference in maternal attitude was found and a correlation between the mother attitude score and the task measure in question, the mother variable was used as a covariant in the analysis for care group and sex effects. In this way it was possible to determine if care group effects on task measures were attributable to group-related mother attitude or to the care experience.

It should be noted that the reasoning behind selectively including a matching variable as a factor in an analysis and including a mother variable as a covariant was somewhat different, although related. For the matching variables we were concerned that care experience might interact with one of the matching variables, particularly number of parents. For the mother attitude variables, however, we were concerned about eliminating variability due to differences in mother attitude if they were group related. The care groups were not prematched on the basis of mother attitude.

Representativeness of the day care setting. Much of the available data on the impact of care experience on child development stems from comparisons of the progress of children in demonstration projects with a matched control group (e.g., the Syracuse project). This information is invaluable. It has the advantage over field data of control over the sample in day care and control over the experience provided for the children. There is often a problem of generalizability of the findings, however, as alluded to previously. The demonstration programs are by design attempts to provide the optimal child development environment. Although some of the private and non-profit day care settings may come close to meeting these standards, visits to a few centers and day care homes make it very evident that the standards are not what would be considered optimal by most early childhood education specialists in the typical day care setting. It was the goal of the present study to obtain comparative information on the development of children in the typical center, the typical day care home, and in the typical parental home. To meet this goal, it was necessary to sample children from a number of centers and homes from a variety of neighborhoods. Considerable variability is automatically introduced but that was consistent with the goal. We were interested in drawing conclusions about the impact of day care, in general, on social-emotional development, not the impact of only quality day care or only day care for the disadvantaged. We attempted to sample what would be considered quality, moderate, and poor day care which served children from disadvantaged, average, and advantaged homes.

Age. Comparison across studies on the influence of day care on development is difficult because of the variations in age of onset, years in day care, and age at testing. It is important that the reader keep in mind when evaluating the results of this project as well as others that the conclusions can only be applied to children who meet the same onset, years in day care, and age at testing parameters. If no difference is found on a particular measure during the preschool age between day care and non-day care children, we cannot automatically assume that the experience had no influence. It may not manifest itself until a later age. Similarly, if a difference is found during the preschool years, it does not follow that the care groups will necessarily differ on that variable for the remainder of their lives.

A somewhat older group of children that has typically been sampled was employed in the present study. Four year olds were selected for several reasons. The most important was that we wished to examine the influence of years in day care on selected measures of social-emotional development, but wanted to do so without the confounding influence of public school. For that reason, we selected the oldest preschool group. Subjects ranged from 3 years 11 months to five years 1 month. By restricting the range of ages included, the selection of assessment instruments which would be feasible to use with all the children was facilitated. It was considered important to be able to employ the same instruments with all children since a basic goal of the study was evaluation of how children raised in diverse environments responded to identical situations.

Data Source. One of the biggest decisions in any research project is the choice of behavioral patterns and technique of assessment of those patterns. Although the current trend is increasingly toward observation in the naturalistic setting, that alternative was judged to be infeasible in the present study. To make valid comparisons of children in the three care modes, it was deemed essential to arrange as great a degree of comparability in the testing situation as possible. That is, it hardly made sense to observe the center child at play in that setting and the home child at play in his bedroom. To achieve our goal of diversity of sample, it was not practical to arrange a common playroom for all children to enter for observation of their response to the same toys and same group of unknown children. Similarly, it was not practical since two-thirds of the mothers were employed or in school during the day to observe the child in interaction with the mother in a common setting.

Because of these difficulties, the decision was made to employ a set of common games, stories, and tasks which did not require the presence of other children or the parents. The assessment instruments for the most part had prior validation data. The basic rationale behind the use of the set of tasks, was to obtain children's responses to identical materials and situations, in the presence of the same strange adult. Administration of the tasks took place in the same, unfamiliar environment for all children, a mobile unit brought to the child's setting.

Focus of the Present Study

Several developmental variables known to be influenced by the child's social learning environment were studied by obtaining children's responses on several tasks. The tasks were designed to assess aspects of curiosity, attachment patterns, self concept, sex role, achievement motivation, impulse control, and cooperation. Several common assumptions about the impact of day care on child behavior were evaluated on the basis of the task measures:

a. Absence of maternal support leads to negative self concept.

b. Day care experience, particularly in a center, fosters the development of cooperation play patterns.

c. Center children are more peer oriented than home-reared children.

d. Day care weakens mother-child attachment.

e. Day care experience results in a broader range of attachments to non-parent adults than does home-rearing.

f. Children in family day care homes become strongly attached to the day care mother, sometimes as strongly as to the mother.

g. Center children show less attachment for the caretaker than do family day care children.

h. Day care children more readily approach new situations and people than do home-reared children.

i. Boys become "feminized" in their activity preferences in the day care center setting.

j. The "school setting" of the center fosters impulse control and ability to delay gratification.

k. The "school setting" of the center promotes interest in achievement, particularly on academically oriented tasks.

PART 1

METHOD

CHAPTER 2

SAMPLING, DESIGN AND GENERAL PROCEDURE

Sampling

Subjects. The participants in the project were 282 four year old children. Four year olds were selected as the target of the study for three main reasons. (1) The effects of the day care experience would not be confounded with the effects of elementary school attendance. (2) By selecting the oldest preschool age group it would be possible to assess the effects of the number of years in day care on task measures. (2) An important practical consideration was that by limiting the age range, a common set of tasks could be employed for all subjects, thereby facilitating interpretation.

Each child had experience in one of three types of care situations. Care experience was determined through caretaker records and parental report. The criteria for inclusion in each care group were as follows:

Group Day Care (GDC)

A total of 105 children in centers were sampled. Mean age was 53.6 months.

a. conglomerate care -- these 70 children had been in a day care center full-time (30 or more hours per week) for at least 9 months previous to testing. They had also spent at least six months with a babysitter or with a family day care mother prior to entering a center. Total number of years in day care ranged from 9 months to nearly five years. The average number of years in a center was just over three years (3.29 years).

b. center care only -- these 35 children had been in a day care center full-time (30 or more hours per week) for at least 9 months previous to testing. No previous day care experience of any type was reported by the mothers of these children. The number of years in day care was generally less than for children in conglomerate care but ranged from one to four. The average was about two years (1.80 years). Only two "center care only" subjects had been in day care more than 2½ years. These children had attended a center accepting children at one year of age.

Family Day Care (FDC)

These 92 children had been in a licensed family day home full-time (30 hours or more per week) for at least nine months previous to testing and ranging to as many as five years. Licensed capacity of the homes ranged from 1 to 6 full-time children. Five FDC children had previous care with a babysitter at home or had spent a short time in a day care center. Eight children had some preschool experience (Head Start or Montesori) concurrent with the FDC situation. After subtracting out the time spent in preschool, these children still met the criteria for full-time family day care. The average number of years in day care was just under three years (2.76 years).

Full Parental Care (PC)

These 85 children had been in the full-time care of the mother and/or father since infancy. Mean age was 53.5 months. An effort was made to include children with and without preschool experience since it was expected that the mothers of the two groups might have somewhat different philosophies of child-rearing and education. Thirty-six (42.3%) were attending preschool. With five exceptions the number of hours in preschool per week was six or less. Some attended private preschools, some Seattle park programs, and some community college sponsored cooperative preschools. Preschool attendance was not associated with economic status. Several children attended special pre-paid programs for AFDC mothers.

Matching. Children in day care were more likely to be from one parent families, have no siblings, and have mothers with some training beyond high school than children who are in full-parental care. Since there was reason to expect sex-typing, achievement motivation, and other aspects of development assessed to be affected by such factors, it was deemed imperative to match subjects across the care groups on these factors. Without such matching it would be impossible to determine whether care group effects were due to experience in the care modes or to differences in family characteristics. Reviewers of research on the effects of maternal employment have emphasized the difficulty in interpretation without matching (Siegel & Haas, 1963; Stolz, 1960). A similar problem would exist in assessing the influence of day care if subjects were not matched. It should be kept in mind, however, that it is never possible to match for all possible confounding factors in any field study.

An attempt was made to match each GDC child with a FDC and PC child on the following bases:

a. Race (Black, White)
b. Sex (Male, Female)
c. Number of parents in the home (1, 2)
d. Number of siblings (0, 1, 2 or more)
e. Mother's education (12th grade or less; 12th plus business college, beauty school, community college, work toward BA, etc.; 12th plus professional degree, such as BA, BS, RN, MA)

Matching ensured that for every GDC child with a particular combination of characteristics (e.g., White, 1 parent, 0 siblings, 12th-plus mother's education) a child in FDC and PC also had that same combination of characteristics. A total of 66 matched triplets was achieved. All basic care group comparisons on the task measures presented in Part III were based on those 198 subjects. Of the remaining 84 children tested, matches across two groups (doublets) were achieved for 60 children (15 GDC - FDC doublets, 8 GDC - PC doublets, 7 FDC - PC doublets). These doublets (two group matches) are included in subanalyses involving their respective care situations. No matches were obtained for 24 subjects (16 GDC singletons, 4 FDC singletons, 4 PC singletons). The singletons were omitted from all but a few selected analyses involving rematching across subjects for comparisons of, for example, the effects of number of parents in the home on a task measure. A summary of the characteristics of the matched sample is presented in Table 1. It should be noted that matching was achieved only across care group, not sex. Sex comparison may be confounded by race, number of siblings, mother's education, number of parents or other factors.

Procurement of Subjects. Over 100 day care centers in a four county area (King, Snohomish, Skagit and Whatcom) were listed in the 1974 directory of licensed centers prepared by the Washington State Department of Social and Health Services. Approximately 75% of the listed centers were contacted by mail. Centers interested in having four year olds participate in the project returned a postcard to indicate interest. The project provided permission slips and parent letters which were sent home with potential subjects. Over 98% of the parents contacted gave permission for their child to participate. The GDC subjects were sampled from 25 different centers. Licensed capacity ranged from 34 to 98 children. Twelve of the centers were non-profit corporations and 13 were proprietary. Of the 25 centers sampled, 22 were in King County, the locus of 83% of the total licensed center capacity in 1972 for the four county area. Each of the seven districts in King County (as defined by DSHS) was represented by at least one center and no more than seven. Snohomish County was represented by two centers and Whatcom by one. No center in Skagit County was included since none had been operating for a full year.

Each county DSHS office maintains a listing of licensed day care

TABLE 1

Characteristics of the 198 matched subjects.

Sample Characteristic	Sex Male	Sex Female	Total
Race			
Black	9	6	15
White	87	96	183
Number of Siblings			
Only child	33	45	78
One sibling	48	33	81
Two or more siblings	18	21	39
Number of Parents			
One parent	30	21	51
Two parents	69	78	147
Mother's Education			
12th grade or less	51	36	87
12th grade plus	33	48	81
College degree	15	15	30

Note -- Frequency same for each care group; divide by three to recover number of children in each care group falling within each subcategory.

homes for use in making referrals. Permission was obtained to send a letter describing the project to the day care mothers on the referral lists. Over 2200 such letters were sent out. Those family day care mothers who had a four year old that they wished to have participate returned a postcard. They were then contacted by one of our staff to determine if the child met FDC inclusion criteria, satisfied matching needs, and if the mother had given permission. The 92 FDC children sampled were from 69 different day care homes (one subject from each of 52 homes; two subjects from each of 13 homes; three subjects from each of three homes; and four subjects from one home).

Children in Full Parental Care were obtained primarily through referrals by the mothers of children in the GDC and FDC groups. It was assumed that reliance on referrals from the mothers of subjects in the GDC and FDC groups would increase the likelihood of comparability in terms of race, education, geographical location, etc. On the permission slip sent home with GDC and FDC children, a place was provided to recommend a family who had a four year old who was not in day care. Also, when the mother of a day care child was interviewed by phone after her child had participated, she was again requested to recommend a home child. Referrals were contacted by phone and permission sought for the child to participate. Of those mothers contacted, only two refused to allow their child to participate. Those refusals accounted for less than 1% of the referrals contacted. Due to the constraints imposed by the matching criteria, permission was obtained for many more children than actually participated in the project.

It should be noted that parents of potential subjects in all groups were given approximately equivalent information about the project. They were told that it was a study of the social and emotional development of children in different kinds of care situations - centers, day care homes, full parental care, and that we were looking for representative children in each care situation. The sponsoring college, Western Washington State College, and the granting agency, United States Office of Child Development, were identified. The parents were told that a van set up like a play room would be brought to their child's center, day care home, or home (whichever was appropriate), and that the child would individually be taken into the van for stories, games, and toys with a trained woman from the college. It was explained that two visits would be made, each lasting about one hour. It was emphasized that the duration of each visit would be determined by the child's interest. All parents were asked to provide information regarding occupation, education, number of children in family, and the four year old's care history. Mothers were not asked to consent to a 40 minute interview about child rearing until after the child had participated. This request was not made on the first contact so that the sample would not include only those children with especially cooperative parents. It was also our experience that mothers were much more agreeable to the interview (and more relaxed) after seeing the child's enthusiastic response to his visits in the van.

Design and Procedure

Overview of Design. The basic design of the study treated care groups and sex as independent variables. In selected comparisons number of parents or number of years in day care (applicable to GDC and FDC), were also treated as independent variables when the available literature suggested an interaction with care mode or sex might be likely.

Data Sources. Data on child behavior were obtained from two sources: 15 tasks and child behavior ratings. The task measures were obtained in the van during the two hour testing period. Areas of development assessed were Curiosity, Attachment, Self-Concept, Sex-Role, Achievement Motivation, Impulse Control, and Cooperation. Child behavior ratings were made by caretakers on several of the same aspects of behavior being assessed in the tasks. The ratings were treated as complementary to the task measures.

Since children in the study were not assigned to a care experience, but were selected from among children already in one of the three settings, possible confounding of maternal attitude toward child-rearing was believed to be a real possibility. Accordingly, the mothers of participating children were interviewed on several aspects of child-rearing in an attempt to gather information which would allow for interpretation of obtained care group differences as due to or independent of maternal attitude differences.

To provide a basis for description of the characteristics of the day care settings three instruments were developed: Center Information Form, Day Care Home Information Form, and a Center Rating Form. These instruments provided information regarding degree of structure, perceived role of caretaker, number of infants in the setting, etc.

Table 2 presents a summary of the sources of data for the project.

TABLE 2

Sources of data for each care group.

Source of Data	Care Group GDC	 FDC	 PC
15 Tasks	Yes	Yes	Yes
Mother Interview	Yes	Yes	Yes
Child Behavior Ratings	Yes	Yes	Yes
Center information	Yes		
Center Ratings	Yes		
FDC Home Information		Yes	

A YES in the table indicates that data was obtained for that care group using the source listed. Note that mother interviews, child behavior ratings, and task measures were obtained for all three care groups.

Testing Environment and Task Sequence. All tasks were administered in a mobile unit taken to the home or center. The use of the van ensured uniformity of environment for all participating children. It was, of course, not desirable to have the mother present during the administration of games for the home-reared group but necessarily absent during administration to day care children. Use of the van controlled for the presence of "others" and also for interruptions. An auxiliary benefit of the use of the van was that the children enjoyed the child-oriented environment (all furniture and the room itself were child-sized).

The testers were of the impression that the mobile unit created an atmosphere of intimacy which facilitated task administration, partly because of its diminutive size but also because of its "specialness". It is not a daily occurence for a child to be told that a lady is coming in a special playroom that is just for him. Playing in the van also meant an hour of undivided adult attention. The importance of these factors was inferred from the children's eagerness to return to the van on the second day of testing.

As noted above, tasks were administered during two one-hour sessions (with a few exceptions). The order of the tasks was constant for all children to avoid any possibility of confounding care group with sequence. An attempt was made to schedule one task on each day from the major areas of development of interest. It was assumed that because of illness or other factors, a few children might be inadvertently tested on a "bad" day, and thus display unrepresentative behavior. By spreading the tasks over two days, we decreased the likelihood that all measures would be so influenced. The task sequence is presented in Table 3.

TABLE 3

Day and sequence of task administration.

	Area of Development	Task
Day 1	Curiosity	Toy Novelty
	Attachment	Who Stories
	Self-Concept	Draw-A-Person
	Sex-Typing	Boy-Girl Preference
	Achievement Motive	Bean Bag Game
	Impulse Control	Delay of Gratification
	Achievement Motive	Toy & Activity Preference
Day 2	Achievement Motive	Picture Memory Task
	Sex-Typing	Toy Preference
	Self-Concept	Face Game
	Impulse Control	Draw-A-Line Slowly & Pull-A-String Slowly
	Curiosity	Berlyne Shapes
	Cooperation	Marble Game
	Sharing	Surprise Box

CHAPTER 3

CHARACTERISTICS OF DAY CARE SETTINGS

To provide the basis for description of the situational characteristics of the day care center and the family day care home, an information form was completed by the caretaker in each situation. The form asked about the number of children in the care situation, their ages, and racial composition of the group. Caretakers also gave a summary of the daily routine and answered several questions about their philosophy of child care. The information forms for centers and day care homes are presented in Appendices A and B. Not all the questions on philosophy were directly parallel on the two forms but many direct comparisons were possible.

In addition to the information forms, a rating was made of day care centers on variables such as degree of group versus individual orientation, flexibility, degree of choice allowed child, and sensitivity of teachers. The 17-item rating scale is presented in Appendix C. Most items were adapted from Prescott (1967). The ratings were made by the two testers. Since both testers did not visit all centers, each was responsible for rating a specific subset of the 25 centers. At the outset of the study, both testers observed and rated the same five centers. The ratings were compared and discussed to ensure that both raters were interpreting the scale points similarly. Typically, a tester visited a center several times (the number depending upon the number of participating children, of course). An effort was made to sample all periods of the day over the visits, observing activities of the four year old groups for periods of 15 minutes to three hours at a time. No ratings were made until the tester had sampled from afternoon and morning, free play and structured periods, and at least one snack or lunch. Over the course of the visits, the testers observed the equivalent of one full day's activities in most centers. Ratings were completed for 23 centers.

It had originally been proposed that similar ratings would be made of family day care homes, but we found that because of the smaller number of children and the more informal atmosphere, our presence completely disrupted the ongoing routine. Consequentlv, description of the family day care homes is based only on the information form completed by interviewing the day care mother.

Composition. Information regarding number of children, age range, and number of non-white children in centers and homes is presented in Tables 4 and 5. Information forms were completed by teachers in 18 of 25 centers and by family day care mothers in 68 of the 69 homes. All but two of the centers were under 60 full-time children, with two of those centers having 20 or fewer children. Few centers (4 out of 25) were licensed for children under two years of age, while 42% of the day care homes reported having one or more children in the infant-toddler stage on either a part- or full-time basis. In those centers taking children under two, the infant-toddler group was physically separated from the preschool group and had separate equipment and caretakers. Few day care mothers reported any attempt at physically separating or grouping the children in her care by age. All ages (except for tiny infants) typically

TABLE 4

Composition of day care centers.

Composition Category	Centers with one or more in category	Distribution[a]					
		0	1-10	11-20	21-40	41-60	61-80
Number of Children							
Part-time	17	1	7	5	6	0	0
Full-time	18	0	0	2	6	8	2
Ages							
Birth-two yrs.	4	14					
Two-five yrs.	18	0					
Five +	18	0	9	9[b] →			
Non-White Children	18	5	11	3[b] →			

[a] N = 18 centers

[b] Number of centers with 11 or more non-white children

TABLE 5

Composition of family day care homes.

Composition Category	Distribution[a]			
	0	1-2	3-4	5 or more
Number of Children				
Part-time	17	30	14	7
Full-time	-	27	21	20
Own	14	34	16	4
Ages				
Birth-two yrs.	40	28[b] →		
Two-five yrs.	-	20	33	15
Five +	5	63[b] →		
Non-White Children	53	15[b] →		

[a] N = 68 family day care homes

[b] Number of homes with one or more children in category

played in the same room and had the same toys available. The only limitations in joint play were either for safety reasons or by the children's own choice. Because certain activities such as painting and crafts are easily disrupted by young, mischievous hands, many day care mothers did at certain times allow and encourage the older children to isolate themselves in a recreation room or kitchen. The decision to isolate, however, was often the older children's, not an adult imposed restriction.

The mix of ages in the older-than-preschool-direction was also found to be more prevalent in day care homes than in centers. Although all centers reported the presence of one or more children five years of age or older, many of these children were part-day kindergarten or children who had just missed the birthday cutoff for kindergarten. A few centers did provide after school care for grade school children but the practice was much more commonly found in day care homes. Even if the day care mother did not happen to take day care children of grade school age, her own children were frequently in that age bracket. The day care mother's school-age children were often observed interacting with the day care children after school. In general, free mixing of children of different ages was considerably more frequent in day care homes than in centers. Many centers restricted contact between children as close in age as three and four by assigning them to separate classes (in separate rooms), and by scheduling separate outdoor free play periods.

Although age mixing was more prevalent in day care homes than centers, racial mixing was not. Only five of the 18 centers were composed of only white children, while nearly 80% of the day care homes sampled were composed only of white children. We found only one instance of a racially integrated (black-white) day care home; 53 were all white children (except for an occasional Oriental or Indian child) and 14 were all black children. In the central area of Seattle, two of the centers sampled were composed of predominately black children, but most were racially integrated. The predominately or exclusively white centers tended to be located in outlying areas where the proportion of minority families in the immediate vicinity was very small. Although proportionally more centers than day care homes had some racial mix, over half of the centers sampled could not be accurately described as integrated.

Philosophy and Practice. Center and family day care caretakers were asked to report their philosophy and practice on several child rearing and activity variables. Among the more interesting comparisons between caretakers in centers and homes were those on perceived role, special points about themselves or the facility, and the degree of structure in the setting. Table 6 presents a summary of the responses made by day care mothers and by center personnel on those three items. Of the 16 center personnel who gave a scoreable response to a question about their perceived role in interacting with children, all reported their role to be that of a teacher and/or friend. No center teacher mentioned the role of mother substitute or the unglamorous role of babysitter. Similarly, few day care mothers characterized themselves as "just babysitters" or child custodians. Day care mothers, however, saw their role as mother substitute and/or friend, not teacher, as did center

TABLE 6

Summary of center and day care home reported degree of structure, role, and special points.

Caretaker Report	Percent of Family Day Care Mothers	Percent of Day Care Centers
Degree of Structure		
Whole day planned	0	5.6 (1)
Most of day planned	11.8 (8)[a]	27.8 (5)
About 1½ hours planned	33.8 (23)	66.7 (12)
About ½ hour planned	38.2 (26)	0
No planned time	16.2 (11)	0
Role[b]		
Mother substitute	56.1 (37)	0
Teacher	16.7 (11)	66.7 (12)
Friend or aunt	42.4 (28)	77.8 (14)
Babysitter	7.6 (5)	0
Special Points[b]		
None	34.8 (23)	11.1 (2)
Facilities	7.6 (5)	33.3 (6)
Philosophy	36.4 (24)	61.1 (11)
Special children	13.6 (9)	38.9 (7)
Training	7.6 (5)	5.6 (1)
Knack with children	13.6 (9)	0

[a] Frequency in parentheses

[b] Multiple response possible

personnel. While nearly two-thirds of the center personnel perceived one of their roles to be teacher, only 17% of the day care mothers viewed "teaching" as one of their roles. Many day care mothers said they perceived their role as one of providing all the experiences for the child that a mother would (and that they would provide for their own child). Formal instruction was not among those experiences for most. About two-thirds of the mothers reported having no structural learning time for the children in their care, while all centers reported at least one hour of planned activities per day (activities designed to meet specific goals with respect to preacademic or physical development).

The difference in reported degree of structure apparently had little influence on whether activities such as lunch, nap, outdoor play, or instruction were handled on a group or individual basis. See Table 7 for a tabulation of the number of centers and day care homes handling lunch, nap, outdoor play, and instruction on an individual or group basis. Except on instruction, a higher proportion of centers reported a group rather than individual orientation, but the difference was not as great as one might have expected. Although a few more day care homes (20%) than centers (5%) reported giving children some say about what and when they ate, most day care mothers (80%) served the same menu to all but infants and provided a snack at a fixed time. Three (17%) of the centers took into consideration individual children's needs and parents' wishes on nap in comparison to 21 (31%) of the day care homes. For both teacher and day care mother, the only break in the day comes during nap. Partly for that reason, most caretakers strongly favor nap. They also

TABLE 7

Percentage of centers and day care homes reporting
a group, individual, or a combined approach to lunch,
nap, outdoor play, and instructional activities

Activity	Family Day Care Mothers	Day Care Centers
A. Lunch		
Group	79.4 (54)[a]	94.4 (17)
Individual	17.6 (12)	5.6 (1)
Both	2.9 (2)	0
B. Nap		
Group	67.6 (46)	83.3 (15)
Individual	20.9 (21)	16.7 (3)
Both	1.5 (1)	0
C. Outdoor Play		
Group	30.9 (21)	55.6 (10)
Individual	47.1 (32)	16.7 (3)
Both	22.1 (15)	27.8 (5)
D. Instruction		
Group	32.8 (22)	22.2 (4)
Individual	23.9 (16)	22.2 (4)
Both	28.3 (19)	55.6 (10)
Neither (no instruction given)	14.9 (10)	0

[a] Frequency in parentheses

find that the intense play without any chance for privacy (for the child) during the day is exhausting for the children. A quiet time, if not sleep, is often found to be advisable for mature four year olds as well as two and three year olds.

Although we did not obtain systematic data from mothers of home children, we found in attempting to schedule appointments for testing that nap was rarely a factor with home children but nearly always prevented our working with day care children in the early afternoon. Many mothers reported that nap was no longer a regular event with their four year olds, but that the child might occasionally take a nap if the previous evening had been a particularly eventful one. Whether out of convenience for the adult or stemming from the child's need, naps were strongly encouraged if not mandatory in the large majority of the day care but few of the home situations.

Centers and day care homes were most different in providing an opportunity for self-regulated indoor and outdoor play. While nearly 70% of the day care mothers allowed the child to have a say in whether he played in or out, relatively few centers were able to offer such an option (see Table 7 C). All center children were typically required to be either inside or outside. The few centers that did allow individual choice on outdoor play were set up such that the play yard was not only physically adjacent to the indoor play area but was also visible from the indoor area. Centers generally did not allow children to play outside of the view of an adult even if the area was enclosed.

In visiting centers, day care homes, and private family homes, probably one of the most outstanding differences was the extent to which children were allowed to play without the immediate surveillance of an adult. As Prescott and Jones (1971) have pointed out, the lack of opportunity for real independence from an adult, in centers especially, may provide a significant barrier to the child's fully exploring his own capabilities. Home-reared children and many family day care children have much more opportunity for individual play, privacy from adults, and freedom to explore beyond the play room. One important factor underlying the restrictiveness of many centers on outdoor play is location. Many more centers than private homes are located on busy, main streets. Parents who lived in a similar location were also found to be much more restrictive about allowing freedom to explore alone outside than were parents who lived on a side street or cul-de-sac.

Reported philosophy on six child-rearing variables presented in Table 8 was found to be quite similar for day care mothers and center teachers. Only on handling of dependency and aggression toward adults did they report different approaches. Somewhat surprisingly, center teachers were more likely to report that they would tolerate dependency more than were day care mothers. Teachers were also more tolerant of aggression toward themselves than were day care mothers. About two-thirds of the teachers reported that they would allow verbal aggression (but not physical) directed toward themselves. Based on our observations of actual teacher behavior, however, we were inclined to interpret the more tolerant attitude of the center teacher as reflecting textbook philosophy and not actual practice.

TABLE 8

Center and day care home philosophy
on several child-rearing practices.

Philosophy Scales	Percent of Family Day Care Mothers	Percent of Center Teachers
Affection		
Forces on child	6.1 (4)[a]	0
Natural expression	77.3 (51)	83.3 (15)
Reservations	15.2 (10)	16.7 (3)
Avoid physical affection	1.5 (1)	0
Dependency		
Not tolerate	15.2 (10)	5.9 (1)
Tolerate only first weeks	16.7 (11)	23.5 (4)
Allows but encourages independence	54.5 (36)	70.6 (12)
Does not actively encourage independence	13.6 (9)	0
Obedience		
Very important	50.0 (33)	44.4 (8)
Moderately important	37.9 (25)	50.0 (9)
Not important	12.1 (8)	5.6 (1)
Reasoning		
High	43.9 (29)	55.6 (10)
Medium	47.0 (31)	38.9 (7)
Low	9.1 (6)	5.6 (1)
Restrictiveness		
High	16.7 (11)	22.2 (4)
Medium	65.2 (43)	55.6 (10)
Low	18.2 (12)	22.2 (4)
Aggression to Adults		
Never encountered	10.6 (7)	0
Not allow	43.9 (29)	27.8 (5)
Allows verbal only	37.9 (25)	66.7 (12)
Allows verbal and physical	7.6 (5)	5.6 (1)

---

[a] Frequency in parentheses

Activities in Day Care Homes. Every center provides the materials for at least simple arts and crafts, table games, and group physical activities. At least sometime each week they also have stories, music, and organized pre-academic instruction. Since day care homes reported having less planned time, and less formal instruction than did centers, we were interested in whether there was evidence that the actual activities of the center and day care home differed. Even though few day care mothers claimed to have formal activity periods, we observed that many of the same activities available in centers were also available in some day care homes. Table 9 presents a tabulation of the number and percentage of day care homes reporting that they provide each of several types of organized activities. Interestingly, only about half of the day care mothers mentioned reading stories, or providing number and letter experience (either by plan or in response to child interest). The overall impression of their responses was that most day care mothers provided age-appropriate toys, bikes, outdoor equipment, and a few simple art supplies (colors, paper, scissors). For the most part the children entertained themselves using those provided materials. Although some parents and educators may argue that such lack of planned, pre-academic, group oriented activity is not making full use of the potential of the preschool child's ability to learn, it does more closely approximate the typical home environment than does the "classroom" atmosphere in many centers. It may also allow for more creativity and spontaneity in the use of materials. The home atmosphere may also allow more latitude for children to work out their own social problems. We make these

TABLE 9

Percentage of day care mothers who reported providing each of eight types of organized activity for children in her care.

Types of Organized Activities	Percent of Family Day Care Homes[a] N=68
Arts and crafts (simple, e.g. coloring, cutting)	80.9 (55)[b]
Arts and crafts (elaborate, e.g. painting, wood construction)	36.8 (25)
Group table games (e.g. Candy Land, Lotto, Checkers)	33.8 (23)
Group physical games (e.g. catch, frisbee)	38.2 (26)
Music	25.0 (17)
Calesthenics	11.8 (8)
Stories	54.4 (37)
Pre-academic instruction	48.5 (33)
No organized activities	2.9 (2)

[a] Multiple response possible

[b] Frequency in parentheses

comments only to point out that absence of planned, pre-academic activities should not immediately be judged as negative in all respects.

Center Ratings. As noted earlier, to provide a basis for characterizing the activities and atmosphere of the center environment, the two testers made observation-based ratings of 23 of the 25 centers. A summary of the distribution of centers on each of 17 rating scales representing center, teacher, and child characteristics, is presented in Table 10. As can be seen from the distribution of centers at each of the scale points, centers varied markedly. It is interesting that in no center were children allowed free access to all activities available at the center at all times. Centers did not have the staffing or space to allow complete freedom of choice of activity. Those circumstances are not unique to the center, however. A parent or day care mother is not always available at the child's whim to set up equipment or provide materials for a project. Some centers did manage to offer a choice among several activities during certain periods of the day. There were others (about half) that provided little or no choice of activity. Even during free play the choices were very limited.

One often assumes that in a center only men and women who are sensitive to the needs of individual children and trained to meet those needs will be employed since directors have a chance to screen applicants for positions. Of course, it is not the case that all center personnel are ideal child caretakers and/or teachers. Our ratings of the extent to which teachers were encouraging and sensitive to the four year olds in their care revealed that less than half of the centers (based on

TABLE 10

Distribution of centers on each of 17 rating scales
representing center, teacher, and child characteristics.

Center, Teacher or Child Characteristic	Scale Anchor	Scale Points					Scale Anchor
		1	2	3	4	5	
Large motor activities	choice	0	6	11	6	0	no choice
Program activities	choice	0	3	7	11	2	no choice
Attention	individual	0	7	8	7	1	group
Teacher-child interaction	encouraging	3	5	9	5	1	restrictive
Teacher-child interaction	sensitive	5	6	9	2	1	insensitive
Temp	rushed	0	5	11	4	3	lethargic
Richness of environment	overwhelming	0	9	9	3	2	unstimulating
Child response	involved	2	6	12	3	0	bored
Child response	relaxed	4	7	11	1	0	tense
Rule enforcement	reasoning	3	8	10	2	0	authoratative
Restrictiveness of rules	freedom	0	4	11	7	1	restriction
Expression of emotion (child)	expressive	5	6	10	1	1	controlled
Expression of emotion (adult)	expressive	3	6	6	6	2	controlled
Indoor space	spacious	3	7	9	4	0	confining
Outdoor space	spacious	5	4	13	1	0	confining
Indoor usage	flexible	2	10	6	5	0	inflexible
Outdoor usage	flexible	3	6	10	3	0	inflexible

N = 23 centers

teacher response) were predominantly encouraging rather than restrictive in their interaction with children. Similarly, less than half were rated as truly sensitive to the needs of the individual children in their care. The extreme is exemplified by one situation in which the full-time teacher did not know the names of several of the children who have been in her care for over six months. Typically lack of sensitivity and restrictiveness were found together. The characteristically restrictive teacher interacted with children only to reprimand or control their behavior in some way. She rarely, if ever, spontaneously offered an encouraging comment or praised children's products. The encouraging teacher, on the other hand, tended to ignore minor conduct deviations and spent her time helping those who needed it or praising children's products or behavior. The encouraging teacher was also more likely to be seen playing with children during outdoor free play.

Day Care Characteristics and Child Behavior. Although it was not within the scope of the present project report to include correlational analyses of situation characteristics and child behavior, these correlations will be presented in later papers. For the purposes of the present report, the summary of day care home and center characteristics provides some basis for the expectation that the two situations should differentially influence child behavior. The variability found among day care homes and among centers in philosophy and activities also serves as a warning that there may be considerable uncontrolled variability in the behavioral measures. Day care, whether in a family day care home or a center, probably does not ensure homogeneity of experience any more than does home-rearing.

PART II

RATING DATA

CHAPTER 4

CHILD BEHAVIOR RATINGS

Systematic, direct observation of a child in naturalistic settings by a trained observer would be considered by most to be the most objective and valid source of data concerning a child's behavior. Because of the many practical problems associated with that mode of data collection, it is more typical to rely on other sources such as (1) behavior ratings made by others (parents or teachers) who have viewed the child in many situations on numerous occasions, (2) projective methods (picture-interpretation, doll play, or story completion), or (3) games and tasks designed to elicit samples of particular types of behavior in a laboratory setting.

Taken by itself any of the above three sources of data would be of questionable objectivity and validity. It was the plan of the present study to utilize information from child behavior ratings and laboratory-type tasks as complementary sources of data to achieve greater validity. The subscales on the child behavior rating scale were developed to directly parallel several of the categories of behavior being tapped through the laboratory tasks. Significant correlations between a behavior rating and a task measure could be interpreted as validation of the task measure. That is, if a child scored low on an achievement task and was also rated as low on achievement-oriented behavior by the caretaker, the child could be classified as a low achiever with some certainty.

Raters. The raters for the GDC subjects were teachers in the day care center. The teacher most familiar with the participating child(ren) was asked to make the rating(s). Each teacher-rater completed the scale for one to eight children. When several children were to be rated by the same teacher, a summary sheet was provided and the teacher encouraged to rate all the children on each item before proceeding to the next. Teachers rated the 82 children for whom complete ratings were obtained. The raters for the FDC subjects were the family day care mothers. Sixty day care mothers rated the 77 children for whom ratings were obtained. The raters for the PC subjects were the mothers. Each of the 76 children for whom ratings were obtained was rated by his/her own mother.

Guilford (1954) suggests that the interest of the rater can affect reliability. In an attempt to motivate raters to be thoughtful and take their time, they were paid $3.00 per child for their time (usually 20-30 minutes for one child). In addition, the scales were presented to the raters at a point of peak interest in the project--generally during or immediately following the second day of testing. At that point the caretaker had had an opportunity to observe the child's enthusiasm over the first day's participation and also to talk informally with the experimenter. The rating scale was presented during or after the second day of testing for a second, probably more important, reason than motivation. It was feared that completing the ratings might raise awareness and self-consciousness in the caretaker with respect to the behaviors being tested. By presenting the scale at or near the end of testing, the caretaker could not inadvertently coach the child to respond in a particular way.

Instrument. The 33-item child behavior rating scale consisted of six sub-scales relating to the task measures. The labels given to the subscales were: Cooperation (5 items), Achievement (7 items), Curiosity (3 items), Aggression/Assertiveness (5 items), Social Orientation (6 items), and Independence (8 items). Since most published child behavior rating scales were found to be either over- or under-inclusive on the particular dimensions of relevance, it was necessary to develop the scale especially for the present study. Many items were adapted from scales using diverse rating procedures (e.g., Beller, 1957; California Preschool Social Competency Scale, Fels Child Behavior Rating Scales; Gordon, 1972; Kohn Social Competence Scale).

Each item was presented with a defining situational description and a five-point rating scale. One (1) on the scale was always anchored by a description of behavior high on the dimension being rated. Five (5) was anchored by a description of behavior low on the dimension. On some items the high end was also the socially desirable end; on others, the middle was socially desirable; on still others the low end of the scale was the socially desirable end. Raters were cautioned to read each item carefully before rating since the situational description varied considerably even for items within the same subscale. They were also asked to avoid labeling a child as, for example, uncooperative or cooperative before reading the situational described in each item. See Appendix D for the complete instructions given to raters and the 33 items.

The scales were revised after two trained (colleagues familiar with the development and use of the rating scales) and four untrained raters had attempted to rate their own children using the scale. These raters were invited to make comments on the form regarding unclear or ambiguous descriptions. The scales were also discussed in detail with them. The wording of items was clarified and the vocabulary simplified in line with the comments of the six pilot raters.

Limitations. There were two major limitations of the use of the child behavior rating scales in this study as a validation instrument for the task measures. (1) There were nearly 200 different raters and all were untrained in the use of the scales. Reports based on reliability studies of the Fels Child Behavior Rating Scales (cf., Guilford, 1954) have emphasized the importance of training in the use of a scale, reliability being quite low unless the raters were trained. Because of the large number of caretakers who would be making the ratings, training was infeasible. It was felt that the reliability lost through the use of many, untrained raters, would be compensated for to some degree in increased validity, however. The rater had observed the child in many different situations over a period of at least nine months. Ratings based on long-term observations were viewed as preferable to ratings based on a limited time sample. With the limited staff on the project it would have been impossible to obtain more than a very small time sample of behavior and also impossible to observe the children in comparable situations. It also would have been impossible to obtain blind ratings. That is, the tester would have had to also make the behavior ratings because of the high time and money costs of staff and transportation. Because of these constraints, the decision was made to rely upon the ratings made by caretakers even with the inherent limitations of using many, untrained raters.

(2) A second major limitation was that the raters for each care mode had a different type of relationship to the child and also different frames of reference. Knowing that parents tend to overrate their children, e.g., commit the error of leniency (Guilford, 1954), it was expected that mothers would use a more restricted range of the scale than teachers or day care mothers. This possibility was examined in the results. A related limitation with less detectible manifestations was the possibility that the raters' frames of reference were quite different. Teachers and family day care mothers would be expected to have somewhat different perspectives than mothers because of their exposure to a variety of children and also because of their lesser personal involvement. A mother with an unusually uncooperative child may simply assume that all four-year-olds are that way and rate her child as moderately uncooperative. She hears other mothers complain that their children do not help with chores and clean up after themselves. She may have no adequate basis for comparison which would allow her to know that while children are not ideally cooperative, her child is on the extreme of the distribution.

Results. Ratings were obtained on 238 of the 282 participating children. Of those returned, 210 had complete data, i.e., a rating for each of the 33 items. Items had been grouped into subscales or sets of items presumably tapping a common dimension. Rather than relying upon the test-constructers' intuition as to which items were actually interrelated, a cluster analysis was performed using the 210 complete protocols.

The cluster analysis provided a statistical basis for summing across items to obtain a small set of rating scores for each subject that could be used in a correlation matrix with task measures. Generally, the obtained clusters were consistent with the subscales. With a minimum beta of 2.5, 23 of the 33 items were included within seven clusters. Table 11 lists the number of the scale item included within each cluster and provides a brief description of the anchor at one end of the scale.

Care Mode Effects. A simple analysis of variance for care group was performed on the scores for each cluster. The mean rating and variance on each cluster is presented in Table 12 for each care group. The F-ratio and F-max for each analysis is also presented in the table. A significant care group effect was found on the Approach, Cooperation, Imitation, and Assertiveness clusters. Home-reared children were rated as significantly more cooperative and more curious than were day care children. On both clusters, the mothers (PC group) were significantly less variable in their ratings than were teachers (GDC) for the Approach Cluster and for the Cooperation Cluster. The FDC ratings fell between the GDC and PC ratings in variability. The discrepancy in variance across the groups suggests that the analysis probably was more reflective of differences in the groups of raters than in the groups of children. One support for such an interpretation is that the group with the most variable Approach and Cooperation ratings (GDC) was the group rated by the fewest different raters. One would have expected less variability in that group since one teacher rated from two to ten children.

On the Imitation and the Assertiveness clusters, GDC and PC children were rated similarly, while FDC children were rated as being more Imitative

TABLE 11

Child Behavior Rating Clusters

Cluster	Subscale Name	Item Numbers	Anchor Description
Approach	Curiosity	13	eager to try new things
		14	asks questions
		15	approaches
	Social-Orientation	21	many friends
		26	likes non-parent adults
Cooperation	Cooperation	2	asks nicely for toy
		3	volunteers to share
		4	takes turns
	Aggression	16	never hurts others
		17	never says mean things
	Social Orientation	22	adults enjoy child
Achievement Orientation	Achievement	6	persistent in activities
		7	likes individual performance tasks
		8	tries to do best
Self-Sufficiency	Independence	28	not seek aid when hurt
		32	settles own quarrels
Imitation	Social Orientation	23	imitates children
		24	imitates adults
Assertiveness	Aggression/ Assertiveness	18	bossy
		20	defends self
Physical Orientation	Achievement	11	prefers quiet activities
		12	prefers non-physical activities

TABLE 12

Mean and variance for each care group
on the seven Child Behavior Rating Clusters

Results	Cluster[a]						
	1	2	3	4	5	6	7
Mean							
GDC	9.95	14.24	6.76	5.98	4.98	4.71	6.43
FDC	10.19	14.10	6.48	5.45	5.62	5.91	6.31
PC	7.86	11.67	5.74	5.38	4.41	4.91	6.71
Variance							
GDC	23.36	41.36	8.24	4.27	4.32	5.72	5.08
FDC	19.09	24.19	7.38	5.13	5.12	4.19	4.76
PC	5.74	10.13	6.15	3.46	4.54	2.14	4.55
F-ratio (df = 2,123)	4.31[b]	3.48[b]	1.62	1.04	3.33[b]	4.28[b]	<1
F max	4.07[b]	4.08[b]	<1	<1	<1	2.68[b]	<1

[a] 1 = Approach, 2 = Cooperation, 3 = Achievement Orientation,
4 = Self-Sufficiency, 5 = Imitation, 6 = Assertiveness,
7 = Non-physical Orientation

[b] $\underline{p} < .05$

of both children and adults and as being less bossy or self-defending than were GDC and PC children. Heterogeneity of variance was only found on the Assertiveness cluster, with GDC being the most variable and PC the least.

In general, the strong leniency effect and low variability in the ratings made by the mothers of PC children on three of the four clusters on which group effects were found, suggests that mothers held a more uniformly positive view of their children than did caretakers. Day care workers apparently differentiated sharply among the children in their care. One might expect the more diverse evaluation of children by day care personnel than by mothers to be reflected in children's self-esteem and adjustment, particularly those children on the extreme.

There are several possible interpretations of the obtained care group differences in ratings on some of the clusters. The differences could reflect (1) child behavior differences associated with care experience, (2) differences in the values and perspectives of the raters, or (3) inconsistencies in children's "at home" and "at day care" behavior. The strong leniency by the mothers suggests the results may have been due to differences in perspective. A report by Nye, Perry, and Ogles (1963) supports the second alternative. They found that mothers and mother substitutes gave very different reports of behavior on the same child. Because those ratings were made in different settings, some of the variability could reflect inconsistencies in children's behavior across settings. It is a little hard to believe, however, that children behave in a more socially desired manner (curious or cooperative) at home than in a substitute situation as our data would suggest. Some differences in behavior would be expected across settings because of the differences in activities, number of children and adults, and the physical setting.

Correlations with Task Measures. Each of the cluster scores was entered into a correlation matrix with 78 task measures (See Appendix E for listing of task measures included). Because of the very different perspective that the raters within the three groups (confirmed by heterogeneity of variance), a separate correlation was also computed for each care group between each cluster and task measure. The individual group correlations were based on Z-transformed rating scores to make the correlations as comparable as possible. Complete data was available for 54 GDC, 65 FDC, and 67 PC children (only children who had complete task, Child Behavior Ratings, and Mother Interview data were included).

Summaries of those correlations which were significant at the .05 level (based on individual group n) are reported in Tables 13 to 19. The overall correlation and the correlation for each group separately are presented. In general, the results of the correlation matrix were disappointing and suggest that despite the familiarity of the raters with the children, the use of many, untrained raters contributed much experimental error. The fact that a cluster score correlated positively in one group and negatively in another with a task measure confirms the suspicion that the ratings by teachers, day care mothers, and parents were made on quite different bases. We had no reason to expect that task measures and observed behavior should show different patterns of relationship depending on the care group. The results of the correlations will be referred to in the individual task result sections when the correlations facilitate or raise questions about

TABLE 13

Correlations between Approach Cluster and Curiosity task measures, Attachment measures, and Self-Concept measures

Task measure		Care Group[b]		
	Combined[a]	GDC	FDC	PC
Curiosity (Toy Box)				
Composite Curiosity	+.18	+15	+20	+19
Approach Rating	+.24*	+.14	+34*	+19
Question Asking	+.21*	+08	+33*	+20
Manipulation Rating	+ 06	-01	+36*	-16
No.different toys manipulated	+.18	+12	+24	+16
No. changes in toys manipulated	+ 19	+12	+37*	+12
Curiosity (Berlyne)				
No. items viewed before complaint	+ 01	-14	+07	+01
Attachment (Who Game)				
Parent (Frustrated Story	- 19	-10	-27*	-20
Parent (Scared Story)	-.08	-06	-03	-27*
Child (Undecided Story)	+ 13	+28*	+08	+13
Non-family adult (Sick Story)	+ 12	+06	+26*	-01
Self-Concept				
Face Game (Happy-Sad Scale)	+ 09	+42*	-07	-02

[a] N = 186

[b] n = 54,606; n = 65,FDC; n = 67, PC

*p < .05

TABLE 14

Correlations between Cooperation Cluster and several task measures

Task measure	Combined[a]	Core Group[b]		
		GDC	FDC	PC
Cooperation Games[c]				
Marble Game	--	--	--	--
Cooperation Box	--	--	--	--
Attachment				
Non-family adult (Sad Story)	-27*	-30*	-21	-34*
Non-family adult (Scared Story)	-13	-01	-10	-26*
Curiosity (Toy Box)				
Percent novel toys manipulated after choice	-15	-29*	-02	-10
No. toy changes	-03	-28*	+21	+07
Self-Concept				
Face Game (Happy scale)	+05	-08	+26	-06
Face Game (Strong scale)	-12	-05	-33*	+03
Achievement				
Non-Physical Achievement toy preference	+07	+05	+28*	-06
Memory Game (2nd estimate)	+10	+14	-04	+28*
Bean Bag (Actual Success, tr. 1)	+12	-05	+32*	+03
Bean Bag (Actual Success, tr. 3)	+13	-09	+10	+31*
Sex-typing				
Toy Preference (# masculine choices)	-09	-31*	-02	-01
Impulse Control				
Draw-a-line (tr. 1-2 diff)	+16	+35*	-12	+31*

[a] N = 186

[b] n = 54, GDC; n = 65, FDC; n = 67, PC

[c] No correlations are presented for Cooperation measures because Marble Game scores were based on a pair of children and because not all children participated in the cooperation games. Chi square partitions are presented in lieu of correlations in a separate section.

TABLE 15

Correlations between Achievement Orientation Cluster and several task measures

Task measure	Combined[a]	Care Group[b]		
		GDC	FDC	PC
Achievement				
Bean Bag (Actual Success, tr. 1)	-03	+06	-12	-32*
Bean Bag (Distance, tr.2)	+14	+05	+14	+25*
Activity Preference (No. Non-physical, non-ach. toy choices)	-13	-27*	-25	+11
Sex-Typing				
No. Masculine toy choices	-12	-30*	-05	-03
Male-Female Differentiation (DAP)	+17	-09	+24	+32*
Draw-A-Person (maturity of drawing)				
Articulation Male Drawing	+18	+15	+08	+29*
Articulation Female Drawing	+19	+14	+18	+24
Articulation Self	+19	+24	+12	+21
Self-Concept				
Face Game (Strong scale)	-09	-11	-29*	+13
Face Game (Smart scale)	+06	+05	-19	+32*
Attachment (Who Game)				
Parent (Sick Story)	+13	+36*	-08	+13
Parent (Undeciced Story)	+05	+29*	-12	+00
Child (Sick Story)	-16	-30*	-01	-17
Non-family adult (Sad Story)	+01	+00	+23	-27*
Emotional Problems				
Draw-a-Person Rating	-19	-15	-15	-27*
Curiosity				
Toy Box (% novel toys manipulated)	+00	+09	-27*	-07
Berlyre (# viewed before complaint)	+18	+23	+33*	+05

[a] N = 186

[b] n = 54, GDC; n = 65, FDC; n = 67, PC

TABLE 16

Correlations between Self-Sufficiency Cluster and several task measures

Task measure	Combined[a]	Care Group[b]		
		GDC	FDC	DC
Curiosity				
Approach rating		+36*	-03	+02
Question rating		-29*	-03	+08
No. different toys manipulated		-28*	-10	+18
No. changes in toys manipulated	+04	-10	-00	+28*
Attachment (Who Game)				
Parent (Frustrated Story)		-09	-30*	+01
Non-family adult (Happy Story)	-13	-14	-13	-33*
Sex-Typing				
No. masculine toy choices	+20*	-03	+39*	+20
No. feminine toy choices	-22*	+03	-42*	-21
No. neutral toy choices	-19	+00	+06	+05
Achievement				
Bean Bag (distance, tr. 2)		-09	+27*	+01
Bean Bag (predicted success, tr. 2)		-00	+28*	+17
Bean Bag tr. 3)		+00	+27*	+10
Memory (first estimate)		+28*	-06	-03
Physical non-achievement toy preference		-10	-28*	+13

[a] N = 186

[b] n = 54, GDC; n = 65, FDC, n = 67, PC

TABLE 17

Correlations between Imitation Cluster and several task measures

Task measure	Combined[a]	Care Group[b]		
		GDC	FDC	DC
Curiosity				
Approach Rating	+10	+28*	+17	-08
Question Rating	+14	+29*	+06	+13
Manipulation Rating	+03	-13	+29*	-11
No. different toys manipulated	+12	+22	+30	-22
No. changes in toys manipulated	+17	+34*	+10	-06
Self Concept				
Face Game (Happy Scale)	+22*	+32*	+16	+18
Face Game (Friends Scale	+09	-12	+10	+26*
Sex-Typing				
No. masculine toy choices	-04	+16	-26*	-05
Male-Female differentiation (DAP)	+17	+04	+15	+28*
Emotional Problems				
Draw-a-Person Rating	-12	-07	-04	-26*
Delay of Reward				
Mischel task	-05	+02	-26*	+06
Achievement				
Bean Bag (Distance, tr. 1)	-14	-24	-33*	-18
Bean Bag (Distance, tr. 2)	+10	-03	+03	+32*
Bean Bag (Goal Discrepancy, tr. 3)	+15	+04	+11	+27*

[a] N = 186

[b] n = 54, GDC;n = 65, FDC; n = 67, PC

TABLE 18

Correlations Between Assertiveness Cluster and several task measures

Task measure	Combined	Care Group[b]		
		GDC	FDC	PC
Achievement				
Bean Bag (Predicted Success, tr. 2)	±05	+30*	-19	+08
Bean Bag (Attainment Discrepancy, tr. 2)	-12	-14	+05	-28*
Memory (Attainment Discrepancy)	+01	-03	+30*	-05
No. Occupational Choices	+16	+03	+28*	+19
Self Concept				
Face Game (Happy Scale)	+07	+30*	-02	-02
Face Game (Pretty scale)	+06	-05	-11	+32*
Face Game (Mother Love scale)	+15	+36*	-02	+10
Attachment (Who Game)				
Child (Happy Story)	-07	-02	+15	-29*

[a] N = 186

[b] n= 54, GDC; n = 65, FDC; n = 67, PC

TABLE 19

Correlations between Non-Physical Activity Orientation Cluster and several task measures

Task measure	Combined[a]	Care Group[b]		
		GDC	FDC	PC
Sex-typing				
No. masculine toy choices	-34*	-60*	-23	-20
No. feminine toy choices	+24*	+45*	+11	+11
No. neutral toy choices	+18	+37*	+20	-01
Draw-a-Person (maturity of drawing)				
Articulation male drawing	+23*	+21	+20*	+18
Articulation female drawing	+24*	+20	+27*	+24
Articulation self drawing	+30*	+32*	+32*	+27*
Emotional Problems				
Draw-a-Person Rating	-23*	-15	-37*	-15
Self-concept				
Face Game (Mother Love scale)	+21*	- 2	+34*	-29*
Attachment (Who Game)				
Parent (Frustrated Story)	+20	+27*	+20	+13
Parent (Undecided Story)	+16	+34*	+18	-00
Parent (Sick Story)	+12	+34*	+09	-04
Child (Frustrated Story)	-25*	-33*	-32*	-12
Child (Sick Story)	-09	-29*	-02	+00

[a] N = 186

[b] n = 54, GDC; n = 65, FDC; n = 67, PC

interpretation. In general, however, the child behavior ratings provided little validation data for the task measures.

CHAPTER 5

MOTHER INTERVIEW DATA

The purpose of the mother interview was to obtain information about the mothers' attitude toward the child and about the mothers' child rearing practices. Stoltz (1960) pointed out in her review of research on the effects of maternal employment on development that interpretation of differences in child behavior is often difficult. Without knowing whether the mothers of the two groups of children are similar in their child rearing patterns, differences cannot be confidently attributed to the care situation variable. It was for that reason that the mothers of participating children were interviewed. The interview questions were designed to elicit information which would allow for discrimination among mothers on several dimensions of child rearing: acceptance of parenthood and of child, authoritarianism, sex-role training, achievement training, independence training, protectiveness, and restrictiveness.

Instrument. The interview consisted of a series of open-ended questions requiring descriptive and/or evaluative statements from the mothers. A series of specific probes were developed for the questions to ensure uniformity in the type and amount of information available for rating the mothers' responses. Some mothers automatically provided all the types of information desired without probes, while others had to be prodded to offer the needed information. Some of these latter mothers were simply reticent and some apparently had never given much thought to the question posed and had no ready answer to voluntarily offer.

The specific questions asked and the probes are presented in Appendix

E. Several questions were adapted from the NIMH and Patterns of Child Rearing mother interview questions (Yarrow, Campbell, & Burton, 1968). The questions were constructed such that a yes or no answer would not be appropriate. In all cases the opposite extremes of parental attitudes were presented as equally probable alternatives in an attempt to avoid the possibility of a respondent simply affirming the view verbalized by the interviewer.

The interview was conducted by phone for all of the working mothers and most of the non-working mothers. The mother was contacted for the interview after her child had completed the test battery. With two exceptions, mothers were very receptive and often eager to talk with the interviewer. The enthusiastic reaction of the children to the testing situation was caught by the mothers.

Interview by phone was found to have several advantages over face-to-face interviews: (1) the interview could be scheduled and rescheduled to fit best into the family routine; (2) interruptions and distractions were less on the phone since most interviews were scheduled during nap time or after bedtime in the evening; (3) mothers were probably more spontaneous since they were in their own home rather in the day care center or other setting; (4) the interviewer had few or no cues as to physical appearance, economic level, age, etc., which might bias the rating of mother responses. It was the interviewers' subjective impression that the mothers were more comfortable and less inhibited over the phone than they were in a face-to-face situation. One important factor contributing to their ease was that they could not see the interviewer taking notes even though they knew it was going on. Although race of the interviewer and of the respondent was generally detectible by dialect differences, the interviewers felt that the phone situation virtually eliminated any differences in candidness between white and black mothers. The combination of being in their own homes and not directly confronted with a white interviewer may have helped attenuate bias due to differences in race of interviewer and respondent.

Immediately following the interview, the interviewer rated the mother's response to each interview question using a five-point scale. The low and high categories were anchored by descriptive labels. The middle category was also labeled for some items.

The principal investigator and the research associate served as interviewers. Each interviewed 118 mothers. During the first six months of data collection both interviewers were also engaged in data collection with each child making blind interviewing impossible. During the final five months of data collection, however, the investigators worked separately and with different children making it possible to do blind mother interviews. Each investigator interviewed mothers of children not personally tested during that period. Of the 236 interviews, 55% were rated by an interviewer who had not met the child or seen the child's test scores.

In an attempt to ensure high comparability in the ratings, a series of joint interviews (one person interviewed while the second listened) were done by using an extension phone. In this way both raters were able to rate on the basis of identical information. Ratings were compared and discussed. By using this procedure the two interviewers were able to agree upon definition and interpretation of scale categories. The interviewers also periodically (usually at least once a week) listened to each other give the interview to ensure that there was no drift in the questions and probes over the course of the year.

Results

A total of 236 interviews were completed. A cluster analysis provided the basis for summing across sets of items to obtain a set of mother attitude scores that could be used in a correlation matrix with task measures and submitted to analysis of variance for care group effects.

Mother Attitude Clusters. With a minimum beta of 2.5, 14 of the items were included within four clusters. (All items except those dealing with goals were submitted to the cluster analysis.) Table 20 lists the interitems included within each of the four resulting clusters and provides a brief description of the anchors.

Care Group Effects. To determine whether care group was a significant factor influencing the mother attitudes reflected in the cluster scores, a simple analysis of variance for care group was performed for each of the clusters. The results of those analyses are presented in Table 21. No significant effects of care group were found on the Democracy, Child-Centered, or Demanding Clusters. A significant care group effect was found on the Acceptance Cluster. Mothers of GDC children were rated as more accepting than mothers of FDC or PC children of their roles as parents and more positive in their reaction to the child. The absolute difference in rating was not large but the finding of a statistically

TABLE 20

Mother Interview Clusters

Cluster	Item Name	Anchor Description
Democratic-Liberal		
	Adult Aggression	encourage adult aggression
	Peer Aggression	encourage peer aggression
	Rule-Making	consults with child in formulating policy
	Sex Role	attempts to interest child in opposite-sex activities
Accepting		
	Acceptance	enjoys parenthood
	Resentment	no resentment
	Evaluation	praises even ordinary behavior
	Explanation	always answers child's questions
Child-Centered (Protective)	Protective	shelters from any threat
	Babying	continually offers help
	Life Style	child completely altered life style
Demanding		
	Achievement	wants child to be best
	Acceleration	regular training for skills
	Restrictiveness	standards restrictive

TABLE 21

Mean and variance on the four Mother Interview clusters for each care group

Results	Cluster 1 Democratic	2 Accepting	3 Child-Centered	4 Demanding
Mean[a]				
GDC	13.70	7.54	9.02	8.50
FDC	13.52	8.54	8.66	8.73
PC	13.39	8.84	8.80	8.48
Variance				
GDC	14.05	11.95	9.14	5.56
FDC	7.96	15.21	7.87	5.78
PC	15.36	22.87	11.06	2.81
F-ratio (df = 2,162)	< 1	3.12[b]	< 1	< 1

[a] A low mean indicates high Democracy, Acceptance, Child-Centeredness, or Demandingness.

[b] $\underline{p} < .05$

significant effect of care group suggests that the possible role of mother acceptance in care group effects on task measures must be considered if acceptance correlates with task measures. The obtained care group difference is in part, consistent with a difference in "warmth" reported by Winett, et al (1974). They found that mothers of center and babysitting groups tended to score higher on warmth than mothers of home-reared children or part-time day care centers.

Three subscales dealing with mothers' goals for their children (XVII) were not included in the cluster analysis because scoreable responses were not obtained from all the mothers and because the subcategories for the general goals item did not arrange into a continuum. The percentage of mothers in each care group responding within each subcategory under marriage, education, and general goals is presented in Table 22. With respect to mothers' marriage goals for their children it was found that about 40% of the mothers said that they did not care or said it was up to the child. No relationship between wanting marriage and care group was found ($X^2 = .46$, $df = 2$). Mothers of home-reared children, however, were found to differ from mothers of day care children in their attitude toward college. A significant relationship between encouraging or definitely wanting college for the child and care group was found ($X^2 = 9.01$, $df = 2$, $p < .05$). Only about 23% of the mothers of PC children said that they would actively encourage their child to go to college, while 45% of the mothers of GDC and FDC children claimed such a goal for their child. Mothers of PC children were more likely than mothers of day care children to qualify their desire for their child to go to college by adding that it was up to the child. Since many of the mothers in the sample had only

TABLE 22

Mothers' marriage, education, and general goals of other children (percentage of mothers in each care group responding within each subcategory)

Mother's Goals for Child	Care Group		
	GDC	FDC	PC
Marriage	(n = 78)	(n = 76)	(n = 69)
don't care	13.3%	24.0%	19.7%
up to child	26.7	17.33	25.8
want to marry but not too young	22.7	30.7	10.6
disappointed if not marry	18.7	6.7	21.2
definitely want to marry	18.7	21.3	22.7
Education	(n = 75)	(n = 75)	(n = 66)
don't care	10.3%	10.5%	15.9%
finish high school	23.1	18.4	21.7
hope goes to college, but up to child	21.8	26.3	39.1
encourage college	16.7	15.8	10.1
definitely want college	28.2	28.9	13.0
General Goals	(n = 80)	(n = 73)	(n = 68)
no specific goals	7.5%	15.1%	10.3%
be happy	16.3	19.2	25.0
know self	31.3	12.3	26.5
be liked by others	0.0	2.7	0.0
not get into trouble	6.3	9.6	11.8
be responsible; respectable	11.3	12.3	11.8
be professional have career	27.5	28.8	14.7

completed high school and perhaps business school, the desire of the employed mother for her child to attend college may have stemmed from her awareness of the limitations of job choice without the college degree. Also, the employment of the mothers of day care children (89% were employed; 11% in school) may in itself reflect a desire toward upward mobility. The fact that twice as many mothers of day care (28%) than of PC (14.7%) children expressed a desire to see their child be a professional and have a career supports that inference. It is interest, however, that the most frequently expressed goal was for the child to be happy and know himself. It was not equally popular among the mothers of children in all care groups, however. A significant relationship between expressing happiness and self-awareness as a goal and care group was found ($X^2 = 6.56$, $\underline{df} = 2$, $\underline{p} < .05$). Fewer mothers of FDC children than GDC or PC mothers gave primary importance to happiness as a goal. In general, the results of the goals question suggested that mothers of day care children have higher educational and career aspirations for their children than do mothers of home reared children and should be kept in mind when evaluating achievement motivation scores.

Correlations with Task Measures. Each of the cluster scores was entered into a correlation matrix with 78 task measures (See Appendix E). All subjects for whom complete task and mother interview data were available were included in the correlation (N = 186). It was expected that the Acceptance cluster scores might be related to curiosity and self-contempt measures. The Democratic cluster was expected to be related to the Who Story measures of attachment. Finally, it was assumed that Demandingness of the mother would be related with achievement motivation tasks. Table 23 presents those correlations which reached significance ($p < .01$). Mother cluster scores were found to be related to few measures. Those correlations which were obtained do not correspond to the expected relationships. There was, for example, no reason to expect Demandingness of the mother to be related with some of the secondary curiosity mearsures.

Cluster Scores as Covariants. The decision criteria for use of a mother interview cluster score as a covariant in a task analysis of variance were arrived at prior to analysis of the mother interview and task data. Those criteria were: (1) a significant ($p < .05$) care group effect was found on a cluster score, (2) a significant correlation ($p < .01$; critical $r = .20$) of the cluster score with the task score was found and (3) a care group effect on the task measure was found in a preliminary analysis. By inclusion of mother cluster scores which met these criteria as covariants in the task analysis of care group effects, it would be possible to parcial out the variability due to mother attitude. By following the three steps outlined in the criteria, the process of which cluster to include in which task analysis would be facilitated.

Since no significant care group effects were found on three of the clusters, the first criterion was not met for Maternal Democracy, Child-centeredness, or Demandingness. Although mothers were found to differ in Acceptance (Criterion 1) and significant correlations between mother Acceptance and four task scores were obtained (Criterion 2), Criterion 3 was not met. No significant care group effects were found on any of the four measures which correlated with the Acceptance cluster (See Chapters 10 and 11). Accordingly, there was no basis for inclusion of the

TABLE 23

Correlations between Mother Interview Cluster Scores and several task measures (p <.01 for all correlations presented).

Task measure	Cluster[a]			
	1	2	3	4
Curiosity				
Novelty of toy box	+23			
Percent novel toys manipulated				-26
No. different toys manipulated				-20
Achievement				
No. occupational choices		+20		
Non-physical achievement toy pref.		+23		
Non-physical non-achievement toy pref.		-23		
Sex-typing				
Male-Female differentiation (DAP)		+21		
Attachment				
Non-family adult (Sick Story)			+23	

[a] 1 = Democratic, 2 = Accepting, 3 = Child Centered, 4 = Demanding

Acceptance score as a covariant.

Although supporting correlations were not obtained, there was some basis for assuming mother attitude might contribute to care group differences on achievement motivation tasks (Bean Bag, Toy Preference, and Memory). Care group was found to be related with the mother's wanting her child to go to college. Mothers of PC children were less set on their children attending college and viewed the decision as one that should be up to the child. Since it was found that the PC children were somewhat less achievement oriented than day care children on task measures, interpretation of the results as due to care experience will have to be qualified.

PART III

TASK MEASURES[a]

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[a] Throughout the result sections in Part III, the procedures outlined in Winer (1971) and Sutcliffe (1957) were followed for analysis of frequency data when a multiple classification was necessary. The technique for exact partitioning presented by Bresnahan and Shapiro (1966) was used when analysis of a portion of an overall contingency table was required for interpretation.

CHAPTER 6

CURIOSITY

Toy Novelty Task

Research with infants and animals has revealed that exploration and curiosity are outcomes of the development of a healthy attachment between the caretaker and infant (Ainsworth, 1969; Ainsworth & Witting, 1969; Bowlby, 1969). It seems ironic at first glance that a dependent relationship should be a prerequisite for later independent behavior but there is considerable evidence that infant-mother dependency is critical for normal social-emotional development. Anyone who has watched a distressed, clinging child gradually relax and slide off his mother's lap will have no doubts as to the relationship between early attachment and the development of curiosity and independence. Eventually the same child will be seen at a considerable distance from the mother eagerly exploring his environment. If he is observed closely, however, it will be noted that he frequently looks back at his mother. He seems to find security in her presence and that security frees him to explore.

It has been suggested by several theorists (Dember, 1960; Hebb, 1955; Leuba, 1955), that there is an optimal level of stimulation for every individual and that the optimal level is continually changing during the course of the individual's life. If the child is distressed or anxious, it has been found that he will not seek additional stimulation. More likely he will seek the comfort of an adult. The inhibiting effect of anxiety on exploratory behavior has been systematically studied by several investigators. For example, Penny (1965) found that children's reactive curiosity was negatively related to manifest anxiety but not related to intelligence. Penny suggests that a high degree of need for variation in one's environment is simply incompatible with the already high state of arousal of the anxious individual. McReynolds and Acker (1961) and Mendel (1965) have also reported that low anxiety is related to preferred level of novelty. Mendel found that age and sex as well as anxiety were related to preferred level of novelty. Children were familiarized with a set of toys and then given a choice of the same toys or sets which varied in novelty from 25-100%. Mendel found that among preschool children the older ones preferred higher degrees of novelty than did the younger and that boys preferred higher degrees than did girls.

The change with age in preferred level of complexity and novelty typically is interpreted as an indication that as the child habituates to once novel stimuli, increasingly complex stimuli are required to maintain an optimal level of arousal (cf., McCall, 1971). It follows that an important part of the caretaker's role may be to arrange the child's environment such that it keeps pace with the child's increasing stimulus needs. That the quality of a child's environment does have a significant effect on the development of attentional processes has been shown in comparisons between home-reared and institutionalized infants. Institutional infants do not show differential attention to novel and familiar stimuli as early as do home-reared children and prefer less complex stimuli (Fantz & Nevis, 1967). Increased handling by a caretaker and enrichment of the physical environment have been shown to enhance the development of differential attentional responses in institutionalized children (Ottinger, Blatchley, & Denenberg,1968; Rubenstein, 1967).

To provide an index of the extent to which children in the three care groups were free of anxiety in a novel environment the Mendel (1965) toy novelty task was adapted. She found novelty of toy preference to be sensitive to differences in age, sex, and anxiety.

To allow for observation and ratings of the child's initial response to a novel environment the toy novelty preference tasks was administered first in the battery of tasks. The testing van itself was novel for all children. None had been inside previous to the administration of the toy preference task. Mothers and caretakers were allowed to walk with the child as far as the door of the van, but the child had to enter by himself. It should be noted that all children were tested immediately adjacent to their habitual daily setting--the center, day care home, or own home. One might expect quite a different reaction if the children were transported to an entirely new setting. Only the mobile unit and adult tester were novel in this particular task, not the entire setting. The setting was by design as equally novel for all three groups as possible.

The toy box was positioned several feet from the door of the van and was used as the focal point for making ratings of the child's approach, scan, manipulation, and question asking behavior. Of particular interest was the approach rating, i.e., the degree of hesitancy shown in approaching the toys and initiating play. Was the child enthusiastic and eager even in a novel environment, or was the child serious and hesitant?

The child's emotional security was assumed to be reflected in the nature of his response to a novel situation. A secure child should readily approach and explore the new setting, while the insecure should hesitate and show little attempt to contact the environment. If daily maternal separation results in a sense of insecurity, the day care children should be hesitant and avoid contacting the toys or the tester. If, on the other hand, the day care child's experience with encountering new situations and adults is taken into consideration, an opposite prediction could be made. That is, the day care child should adapt more quickly to the new environment than the home-reared child because he has habituated to "change in setting" and perhaps has learned that adults other than mother can be relied upon for support.

Method

Task. The toy novelty task was adapted from Mendel (1965). Materials were four clear plastic boxes containing six toys each. Twelve different toys were employed. They were a paddleball, phone, book, turtle, magnet, jeep, clock, pinball, light, kaleidoscope, silly putty, and a ferris wheel. There was a duplicate of each toy so that each toy appeared in two boxes. The toys were distributed such that if Box 1 was initially played with, the other three boxes varied in the degree of relative novelty or redundancy with the first box. Four of the six toys in Box 1 reappeared making it 33-1/3% novel; two of the six toys in Box 1 reappeared in Box 3, making it 100% novel. For half of the subjects in each group Box 1 was the familiarization box; for the other half Box 4 was. Three different combinations of Box 2 and 3 toys were employed.

Each subject was faced with an identical situation on his first visit to the van. The playroom was cleared of all materials except one toy box. The covered box was placed on a bench near the rear of the van making it necessary for the child to walk approximately seven feet to approach the box. As the child entered the van the experimenter engaged the child in conversation about the appearance of the interior, pointing out that it was just like a little house with curtains and carpet, etc. The experimenter then sat on the floor at a point midway between the entrance and the boys and began to write. She looked up frequently, smiling at the child. During this time most children looked the van over and spontaneously discovered the toys. If the child failed to approach the toys or attempt to open the box within about two minutes of the experimenter's sitting down, the experimenter invited the child to play with the toys. After a maximum of three invitations, the experimenter removed the lid and again asked the child if he would like to play with the toys. No further invitations were made by the experimenter after opening the box.

Eight minutes play time was allowed. During that time the experimenter recorded the number and sequence of toys played with during each two minute period, rated the degree of manipulation for each toy within a time period, and recorded questions posed by the subject. Questions were answered directly with enough information to be reinforcing, but no additional information was offered.

After the eight minutes elapsed, the experimenter told the subject that she had some toys she would like to show him. While returning scattered toys to their box, the experimenter explained that she had three more boxes, making four altogether. The child was told that all four boxes would be put on the floor in front of him and that he could choose any one of the boxes with which to play. The boxes were then lined up in front of the child in order of complexity. The child was encouraged to look at all boxes before choosing. The degree of novelty selected was recorded.

A record was made of the toys played with during the first three minutes after the choice.

Scoring. The following measures were derived from the child's protocol:

1. Degree of novelty selected after initial familiarization (0, 33-1/3%, 66-2/3%, 100%).
2. Percent of novel toys manipulated during three minutes after choice. This measure reflected the extent to which a child selected out the new toys to play with if he selected a box containing both new and old toys.
3. Approach rating. Measure was based on the experimenter's observations of the child's behavior prior to and upon opening the toy box. The following 5-point rating scale was used:
   1--Hesitant; plays with toys only towards end of period or never does.
   2--Needs two or three promptings before will touch the toys.
   3--Notices box, but approaches and opens only after one instruction.
   4--Goes to box before instruction; no verbalization; some restraint in manner.
   5--Approaches immediately upon entering van; verbalizations and other behaviors indicate enthusiasm; no hesitation.
4. Manipulation rating. The child's thoroughness of manipulation and visual exploration of toys was rated according to the following scale:

1--Looks at toys but does not touch.

2--Touches; picks up momentarily.

3--Picks up toys, inspects, but mainly cursory; little time spent in discovering the potential of each toy; puts down if not immediately obvious how toy functions.

4--Explores visually and tactually, spending time discovering how a toy works.

5--Explores every possible movement, texture, and noise potential.

5. Scan rating. Based on the actual number of toys manipulated by the child during the eight minute familiarization period.
6. Question asking. The experimenter recorded all toy-related questions and then rated the child's question-asking behavior on a 5-point scale.
7. Number of different toys manipulated during each 2 minute period during the initial 8 minute familiarization period.
8. Number of changes in toys manipulated during each 2 minute period during the initial 8 minute familiarization period. A high score indicates that the child spent little time on each encounter with a toy but tended to pick up each toy more than once during the time period.

Results

A composite curiosity score (CUR) based on four of the toy box measures was derived: novelty of box selected, percent novel toys manipulated after choice, approach rating, and the question rating. A criterion score for high curiosity was established for each measure. The set of criteria are presented in Table 24 for the four measures. The

TABLE 24

Criteria applied to each curiosity measure to select subjects with a high curiosity profile

Measure	range of scores	Criteria for High curiosity Classification
Box novelty	1-4	3, 4
Percent novel toys after choice	0 - 100%	100%
Approach rating	1-5	4, 5
Question rating	1-5	3, 4, or 5
Composite CUR[a]	0-4	3, 4

[a] Composite CUR score = number of measures on which the criterion for high curiosity was met.

number of measures meeting the high curiosity criteria became the subject's composite curiosity score (range 0-4). The mean CUR score for each care group and sex is presented in Table 25 along with the mean scores on each of the component measures. Analysis of variance for care group and sex on the CUR scores revealed a significant care group ($\underline{F}$=3.24, $\underline{df}$=2/192, $\underline{p} < .05$) and sex main effect ($\underline{F}$=5.34, $\underline{df}$=1/192, $\underline{p} < .01$), but no interaction ($\underline{F} < 1$). Males obtained higher CUR scores than females Using a Newman-Keuls multiple comparison procedure, it was found that FDC children met significantly more criteria for high curiosity than did PC children ($\underline{p} < .01$), but that neither group differed from the GDC subjects who fell about half-way between PC and FDC in mean composite CUR score. The results of the analysis of mean CUR scores suggests that day care, particularly family day care, reduces anxiety in a new situation and fosters approach behavior.

To further explore the relationship between care group and curiosity, a tabulation of the number of children in each care group and sex meeting at least three of the four criteria for a high CUR profile was made. The percentage of children meeting the criterion for high curiosity on each component measure and on the composite CUR measure is presented in Table 26. The FDC children, especially males, stood out even more clearly using frequency data than mean scores as the least hesitant group of children. Only 6 out of 33 FDC boys failed to meet the criteria for high curiosity. As a group, home-reared girls had the fewest subjects with high CUR profiles.

Inspection of the percentages of high curiosity subjects in each care group on the component measures (see Table 26) indicated that the approach rating and the question rating best discriminated between the

TABLE 25

Mean score for each care group and sex on five curiosity measures

Measure	Males			Females		
	GDC	FDC	PC	GDC	FDC	PC
Degree of box novelty	3.06	3.36	3.12	3.15	3.27	3.00
Percent novel toys after choice	77.61	84.76	80.21	75.61	85.39	73.79
Approach rating	4.06	4.30	3.76	3.85	3.76	3.52
Question rating	3.12	3.33	2.91	2.76	3.30	3.06
Composite CUR	2.85	3.09	2.52	2.36	2.70	2.21

TABLE 26

Percentage of children in each care group and sex meeting the criteria for high curiosity on each of five measures

Measure	Males			Females		
	GDC	FDC	PC	GDC	FDC	PC
Degree of box novelty (3, 4)	75.76	87.88	75.76	78.79	81.82	63.64
100% novel toys after choice	63.64	66.67	63.64	51.52	60.61	54.55
Approach rating (4, 5)	66.67	87.88	57.58	60.61	63.64	54.55
Question rating (3,4, 5)	57.58	66.67	51.52	45.45	63.64	51.52
Composite CUR (4, 5)	54.55	81.82	60.61	51.52	60.61	39.39

groups. To determine whether the apparent relationship between care group and approach was significant, the chi square for care group, sex, and approach was partitioned. Only the three-way interaction reached significant ($p < .05$). Subsequent breakdown analyses revealed that the relationship between care group and approach was significant only among males, with both day care groups having a higher frequency of non-hesitant boys than the PC group.

On question-asking, sex was not found to interact with care group. Significantly more FDC than GDC children were found to ask a high number of questions (six or more). The home-reared children fell between the two care groups in question asking. The low question-asking rate among many of the GDC children could be interpreted as an index of low curiosity about the toys or as low reliance on adults for information. Since PC subjects were more similar to FDC than were GDC subjects in the frequency of high question-askers, the latter explanation seemed more plausible. Both FDC and PC children generally had greater access to an adult than did center children and may have come to rely more than GDC children on question asking as a means of obtaining information.

In summary, more FDC than GDC or PC children met the criteria for high curiosity on every measure (significantly so on approach, question asking, and composite CUR). The results strongly suggest that the family day care experience provides both the security and stimulation to foster a pattern of high curiosity behaviors, particularly among boys. The experience of separation from the mother may facilitate children's ability to cope comfortably with new situations if the substitute care has been provided in a home setting, i.e., the family day care home. It was interesting that number of years in day care was not found to interact with care group and curiosity ($X^2 < 1$). About 70% of the FDC and 50% of the GDC children, whether early- or late-entry into day care were found to have high curiosity profiles. It should also be noted that the obtained care group difference on rated maternal acceptance (from Mother Interview data) could not account for the results on the toy novelty task. One would expect the group of children whose mothers were rated as most accepting to display the high curiosity behavior pattern. It was the mothers of GDC, not FDC children, however, who were found to be most accepting.

The finding of significant correlations for some groups between the child behavior rating Approach cluster score and the curiosity task measures lends some support to the assumption that we were indeed measuring what we purported to be: approach, question asking, and eagerness to try new things. Although accounting for a small proportion of the variance, the correlations were strongest between ratings made by the day care mothers and FDC child task measures.

Manipulation patterns. Records were made of the number of different toys manipulated during each two minute period throughout the eight minute familiarization period. The number of changes in toys manipulated was also recorded for each time period. The latter measure indicated whether a child tended to spend a long period of time exploring one or two toys or whether he tended to "flit" from toy to toy during the two minute period. We were interested in whether home-reared children might show more sustained attention than day care children. The competition for toys and general commotion of most centers was expected to be less conducive to a "reflective" style of toy manipulation.

The means for each measure are presented in Table 27 separately for each care group, sex, and time period. Only a time period effect was found in the 3 x 2 x 4 analysis of variance for care group, sex, and time period (F=25.35, df=3/564, $p < .001$). Inspection of means revealed that the time period main effect reflected a tendency for subjects to manipulate progressively fewer toys during each successive time period. The biggest drop was between Period 1 and Period 2. Many children gave a cursory look at several toys during the first couple of minutes, and then gave sustained attention to one or two toys the remainder of the time.

The second index of manipulation pattern included information regarding the number of times toys were returned to within a time period as well as the number of different toys manipulated within the period. The child whose attention had not been drawn to any particular toy but who was interested in finding out as much as possible about several was observed to go back and forth between the toys. The effects of care group, sex, and time period were assessed by a 3 x 2 x 4 analysis of variance with repeated measures on time period. The time period main effect and the Sex X Time Period interaction were significant (F=7.44, df=3/564, $p < .001$ and F = 2.90, df=3/564, $p < .03$). Males dropped slightly in the number of changes in toys manipulated from Period 1 to Period 2, whereas the females increased slightly. Since the girls were a little more hesitant than boys about approaching the toys, it is not surprising that they were slower to touch and explore individual toys.

TABLE 27

Mean number of toys played with and the mean number of changes in toys played with for each care group and sex

Measure	Males GDC	Males FDC	Males PC	Females GDC	Females FDC	Females PC
No. toys manipulated						
0-2 min.	2.89	3.12	2.73	3.03	2.85	2.61
2-4 min.	2.33	2.03	1.91	2.91	2.27	2.33
4-6 min.	2.10	2.00	2.03	2.16	1.85	2.15
6-8 min.	1.87	1.91	2.18	1.94	1.88	2.12
Overall mean	2.28	2.27	2.21	2.51	2.21	2.30
No. changes in toys						
0-2 min.	2.27	2.36	2.00	2.19	1.94	1.88
2-4 min.	1.87	1.57	1.33	2.59	1.91	1.94
4-6 min.	1.63	1.67	1.58	1.75	1.61	1.73
6-8 min.	1.30	1.61	1.52	1.56	1.45	1.64
Overall mean	1.77	1.80	1.61	2.02	1.73	1.80

The absence of care group effects in manipulation patterns suggests that although FDC children were less hesitant in approaching the toys than other subjects, they did not differ from other groups in their scan and manipulation patterns once the toys were encountered.

In summary, the results of the toy novelty task provide some evidence that the day care setting can give the emotional-support to allow for the development of a sense of security and a healthy curiosity about the environment. In fact, the results indicated that the day care experience facilitated approach behavior in the novel testing situation for both early- and late-entry children. The fact that the family day care setting was associated with the highest number of children with a high curiosity profile would suggest that the substitute-home environment may offer for more children than other settings the conditions necessary to allow for the freedom to explore new situations without fear. The role of substitute-mother or friend assumed by most family day care mothers may best foster a sense of security in the children, particularly boys. Separation from the mother in a secure substitute environment may be an important step towards being able to handle changes in environment and adults at an early age.

The absence of a difference in the present study between GDC and PC children contrasts with results reported by Schwarz, Krolick and Strickland (1973). The emotional reaction to a new day care setting was compared for a group of children who had been in a day care center since infancy and a matched group of children entering a center situation for the first time at three and four years of age. Although most of the late entering children had been in an informal day care setting, none had center experience. The early-entry children were observed to be more positive in their effect during the first few minutes in the new setting and to continue to be less tense and engage in more social interaction over a period of five weeks. Like the present study the Schwarz, et al. study provides no evidence for emotional insecurity among the day care children as a result of maternal separation. The tendency, however, for center children to be more comfortable in the new group setting than children entering for the first time, may be in part due to the presence of familiar peers for the early entry group. The setting was novel for the early group but many of the children were not. Both setting and children were novel for the late entering group. Schwarz, Stricklund, and Krolick (1972) have shown that the presence of a familiar peer in a novel environment can have an effect similar to that observed with infants when the mother is present, that is, distress is attenuated and exploration follows. The failure to find a difference in approach and exploration in the present study between center and home-reared children may have been due to the fact that the setting in which they were observed was equally novel to both. There was no familiar equipment and were no familiar peers to reduce the novelty of the setting for the center children.

Berlyne Shapes: Response to Complexity

Day care centers frequently make the claim that they provide a well-rounded, developmental-oriented environment for young children. The graduated-class system and the daily schedule of pre-school activities is designed to provide the illusion, if not an actual age- and ability-related program of physical and intellectual stimulation. Much less planned preacademic training purportedly takes place in most family day care homes or when the child is in his mother's care. If, indeed, the day care center is providing children with stimulation planned to be optimally beneficial to most of the children in an age group, we should expect that children in centers will choose to respond to visual input that is more complex than will children in day care homes or children in their own homes. We know from research with infants and young children as well as with adults, that the degree of complexity and novelty responded to increases with age and experience (e.g., Weizman, Cohen, & Pratt, 1971). If center children have experienced a more perceptually stimulating environment than other children, we should expect that they will respond to input of a higher level of complexity.

Looking time has been shown to be sensitive to the influence of both age and experience with respect to preferred level of complexity. However, because of previous problems the principal investigator had encountered in attempting to gather latency-type data with preschool children, we were dubious about defining "response to complexity" as the relative amount of time spent viewing prerated low and high complexity slides. Our fears were temporarily dismissed by the results of a study by Smock and Holt with first grade children (1962) and a preference study by Black, Williams & Brown (1971) with 3 and 4 year olds. Using a looking time procedure (number of 250 millisecond self-controlled exposures) and pairs of slides from the Berlyne (1958) study of human curiosity with adult subjects, Smock and Holt found a strong overall main effect of complexity and a complexity by type of item interaction. Also, a sex effect was found on mean difference scores. Since the task proved to arouse differential looking time as a function of complexity, type of item, and sex of first grade subjects, we devised a similar procedure for use with the preschool children in an attempt to determine whether day care experience, particularly in a center, would lead to greater response to the high complexity materials. As with the toy novelty task it was assumed that children would respond to complex materials, and thereby increase arousal, only if the care situation was successful in fostering security and in providing sufficient stimulus complexity in the children's environment. That is, it was assumed on the basis of previous research with both infants and adults that children would not seek strange patterns of stimulation if the situation itself were anxiety producing or if the complex patterns were too discrepant with the child's previous experience with visual input. We purposely scheduled the Berlyne Shapes task at the end of the two-day test period to minimize the influence of the novelty of the situation itself. After having spent two to three hours in the testing situation, most children were very comfortable. Any influence of anxiety would be of a persistent, chronic variety, not an initial response to a novel environment.

Method

Task. Twelve pairs of slides were prepared from materials used by Berlyne (1958). Each of six types of complexity was represented by two pairs of slides: Irregularity of Arrangement, Amount of Material, Heterogeneity of Elements, Irregularity of Shape, Incongruity, and Juxtaposition. One member of each pair was of low complexity and one of high complexity. See Figure 1 for drawings of the materials. The left member of each pair was of low complexity and the right member high.

For presentation each member of a pair was placed in one of two battery-operated GAF slide viewers. The two viewers were positioned side-by-side in the back of a wooden peep box such that the slides were visible to the child only when illuminated and when the child was looking through a

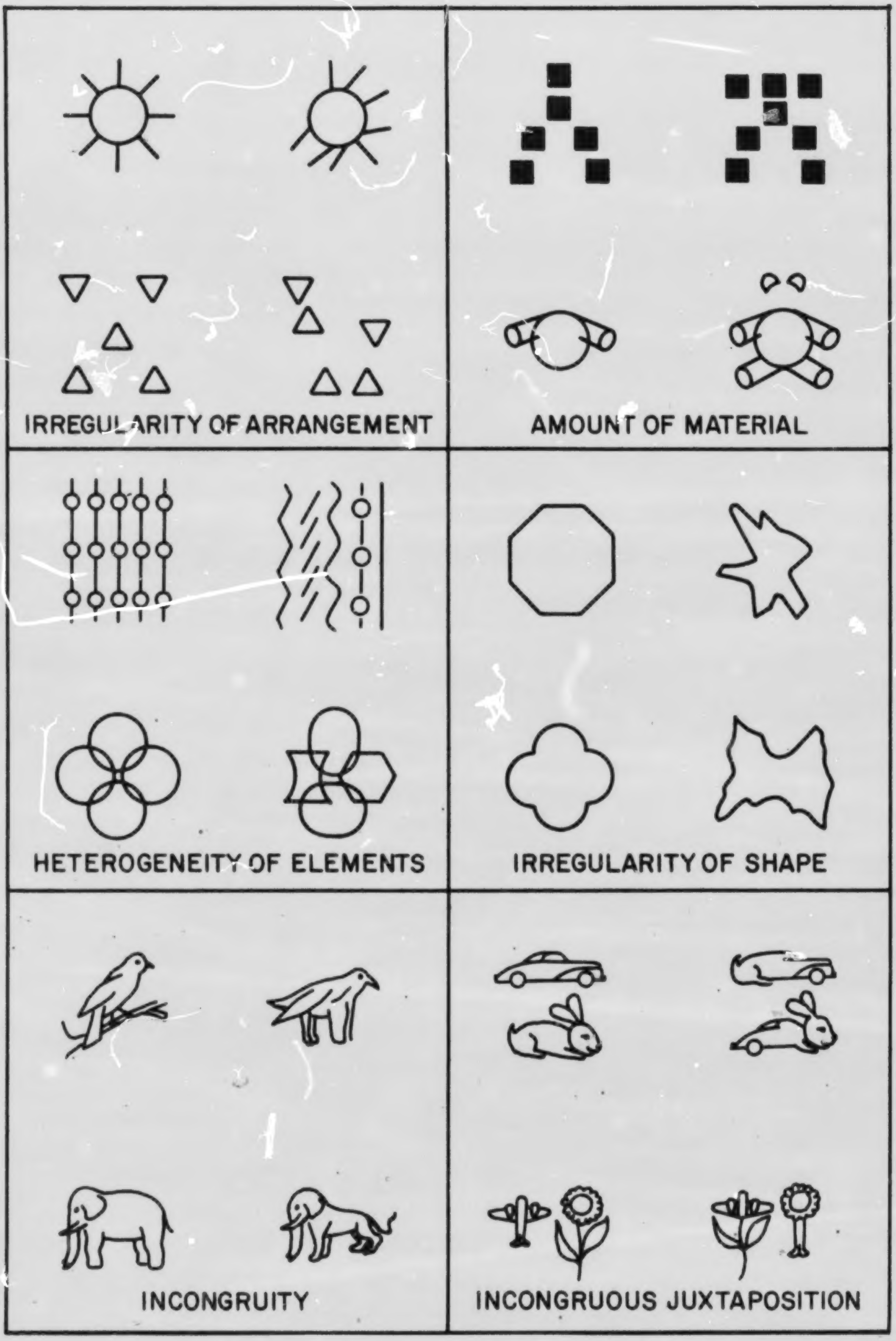
IRREGULARITY OF ARRANGEMENT
AMOUNT OF MATERIAL
HETEROGENEITY OF ELEMENTS
IRREGULARITY OF SHAPE
INCONGRUITY
INCONGRUOUS JUXTAPOSITION

Figure 1. Six types of high (right) and low (left) complexity figures (from Berlyne, 1958).

narrow slot at the front of the box. The purpose of the box was to prevent ambient light from partially illuminating the slides between trials. The interior of the box was painted black, the overhead lights in the van turned off, and the curtains pulled to further reduce the light.

Illumination of the slides was controlled by a pair of experimenter-operated buttons behind the box, and a pair of subject-operated buttons, one on each front corner. Between trials the lights were inactivated by the experimenter's on-off button. Each new trial was initiated by the experimenter simultaneously illuminating a pair for approximately 0.5 second by pressing the second button. The subject's buttons were then activated by the experimenter's on-off button, and the child pressed the button corresponding to the position of the slide he wished to view. Only one slide could be viewed at a time following the brief simultaneous presentation. The child was instructed that he could view each member of a pair as many times as he wished and as long as he wished by pressing the appropriate button. When the child was ready for a new pair he was instructed to signal the experimenter by stopping his pressing responses and by saying, "new pictures." Looking time was recorded with two stop-watches operated by the experimenter. The experimenter was naive as to which slide was high and which low complexity. The experimenter recorded the position, left or right, of the first viewed slide in each pair as well as looking time.

The position of the low and high complexity member of each pair was counterbalanced. Also, one pair representing each of the six types of complexity was presented in the first six pairs and one pair in the final six pairs. The slide order was constant for all subjects.

Scoring. Procedures were as follows:

1. Mean looking time for high and low complexity examples of each type of complexity. Since there were two pairs of slides representing each type of complexity, a mean for the two low and a mean for the two high complexity members of pairs was obtained.
2. Number of pairs viewed before the subject lost interest and said he did not want to see any more pictures. All subjects viewed the entire set of slides, but many indicated boredom before the end of the set. The point in the sequence where the subject first expressed reluctance to view more was recorded.

Results

Although we were well aware of the problems in obtaining useful time-based data with young children, the successfulness of a similar procedure with first grade children (Smock & Holt, 1962) using stimulus materials primarily from Berlyne led us to ignore our previous experience. Pretest data collected with college student's children at our campus cooperative nursery gave no indications of the kinds of problems we were to encounter with the broad range of children participating in the project. In some senses, it might be correct to conclude that we simply selected the wrong behavior to measure as an index of interest in complex stimulus. Many children were considerably more interested in the apparatus and how it operated than in the slides.

The looking times were extremely variable ranging from 0.1 second to as high as 120 seconds. Although the testers did not encourage talking during the slide viewing, it was found to be impossible to inhibit. Looking time was often a direct index of the length of time the child needed to come to an acceptable (to him) verbal description of the stimulus. Readily labelable drawings tended to receive shorter looking time. Variability was also added by children who felt compelled to demonstrate that they could correctly count the number of elements in a figure but had difficulty doing so. Because of heterogeneity of variance, Fmax = 26.35, $p < .01$, the interpretation of the 3 X 2 X 6 X 2 analysis of variance of mean looking time for the effects of care group, sex, items, and level of complexity must be made cautiously. The sex, items, and complexity main effects were all significant factors (F=14.04, df=1/192, $p < .001$; F=31.85, df=5/960, $p < .001$; and F=22.83, df=1/192, $p < .001$, respectively). The Item X Level of Compexity interaction was also significant, F=10.89, df=5/960, $p < .001$. No care group main effect or Care Group X Complexity interaction was found. The mean looking time for each care group is presented in Table 28 separately for each item and level of complexity.

Consistent with the sex effect found on the toy novelty task, the boys in the present study tended to more actively seek contact with stimuli in the environment than did girls. Parents and other caretakers may be more encouraging of exploration of the environment by boys than by girls. Although males were found to look longer than females, the absence of a Sex X Complexity interaction suggests that they were simply taking more time to explore the slides, but not necessarily the high complexity one. The failure to find such an interaction contrasts with the results of the Smock and Holt (1962) study with first graders. They found a sex difference in the relative amount of time spent looking at

TABLE 28

Mean Looking time for each care group on high and low complexity items of six types

Type of Item	GDC		FDC		PC	
	High	Low	High	Low	High	Low
Arrangement	4.54	4.19	4.22	4.38	4.48	4.33
Shape	3.50	3.65	3.42	3.36	3.28	3.58
Amount	4.13	4.35	4.39	4.22	4.50	4.54
Incongruity	3.47	4.02	2.96	4.09	3.13	3.91
Heterogeneity	3.64	3.85	3.51	3.41	3.43	3.14
Juxtaposition	4.39	5.55	4.91	6.15	4.45	5.60

high and low complexity items. Males showed a stronger preference for the high complexity over the low complexity member of a pair than did females.

The Item X Complexity interaction obtained in the four-way analysis of variance of looking time was found to be attributable to a failure of the high complexity items to elicit longer looking times than low complexity items on all but two types of items: Incongruous (E) and Incongruous Juxtaposition (F). Both sets of items contrasted a familiar animal or object with one containing a perceptually conflicting feature (see Figure 1). It is interesting to note that the two types of items on which looking time differences were obtained happened to be the most concrete. Other items contained more abstract figures, e.g., a circle (not a round object) and a hexagon (not a stop sign). The more abstract slides may have simply been beyond an acceptable range of complexity for preschool children. This interpretation is supported by Berlyne's (1960) report of finding similar data (high variability and lack of differential looking time between high and low complexity items) with adult subjects when very complex stimulus materials were used. To obtain a difference the so-called low complexity stimulus must perhaps be so low in complexity that it is virtually dismissed as a target worth fixating by nearly all subjects in the sample being tested. Apparently, even the circle slide presented as a low complexity Shape item did not meet the criterion for many preschool children, although by Grade 1 a marked difference in looking time was obtained on the same slide pair.

Because of the variability in looking time scores, an alternate scoring procedure which ignored absolute time was also employed. The number of subjects in each care group who looked longer at the high than low complexity item was tabulated separately for each type of complexity. The results of that tabulation are presented in Table 29 as the percentage of children looking longer at the high than low complexity item. A Separate chi square was performed for each type of item to assess the strength of the relationship between care group and complexity. No significant relationship was found for any of the item types. The absence of results on categorical data suggests that the failure to obtain a care group effect on mean looking times may not have been due only to the high variability.

To provide an overall index of children's interest in complex perceptual material, the number of items viewed before complaint was recorded. The average number viewed before expressing boredom was 10 slides (of 12 total). Analysis of variance of the number of items viewed before a complaint revealed no care group main effect ($\underline{F} < 1$).

The purpose of the presentation of the Berlyne Shapes was to determine whether children in day care showed any greater tendency to seek contact (through looking) with complex visual stimuli than did home-reared children. No such evidence was found.

Our experience with the administration of the Berlyne Shapes task indicated that for the most part it was inappropriate for preschool children. We were not consistently measuring what we had intended. Children's interest in the apparatus itself, their concern with attaching a verbal label to each slide, and other related problems resulted in large measurement error. Many children were much more interested in the relationship between button-pressing and the experimenter's behavior than in the slides.

TABLE 29

Percentage of children in each care group looking longer at high than low complexity items

Type of Item	Care Group		
	GDC	FDC	PC
Arrangement	46.97	62.12	46.97
Amount	51.52	40.91	54.55
Heterogeneity	48.48	45.45	57.58
Shape	54.55	43.94	59.09
Incongruity	69.70	77.27	66.67
Juxtaposition	71.21	57.58	63.64

The validity and reliability of the task for preschool children could be improved by using real, manipulatable objects, prerated on complexity by children, not adults. Very little in a child's world is only seen and not touched. Abstract patterns play a small role in the child's perceptual world and probably did not provide an appropriate form of stimulus variation for most of the children participating in the project.

CHAPTER 7

ATTACHMENT

Ainsworth (1973) defines attachment behaviors as a class of behaviors which has the result of increasing the proximity between an infant and another individual (peer, stranger, mother, etc.). Maccoby and Feldman (1972) and Marvin (1972) have attempted to determine the normative pattern of attachment behavior during the first four years of life. During infancy it is not uncommon for separation from the mother, especially in a strange environment, to elicit crying that does not terminate until the mother returns and the child actually regains physical contact with her.

Marvin (1972) has reported that by two years of age the child's attachment behavior will be activated by the mother's leaving but the response to the mother's return is attenuated. Proximity without actual contact may terminate the separation protest. By three years of age, the child's initial protest at separation lessens, and exploration of the environment continues in her absence. By four years of age the perception of mother leaving fails to elicit the separation protest syndrome and the seeking of proximity upon her return practically disappears.

Research with humans reared under institutional conditions and with infrahumans raised in isolation has underscored the importance of the development of the early attachment pattern for normal development. Research with deprived and normal organisms has revealed that the development of attachment provides for a secure base from which the child may begin to explore and gradually gain the skills and knowledge about his environment necessary for a mature, independent existence. Dependence is an essential precondition to independence.

Even long separations under adverse conditions have been found to disrupt the normal attachment pattern between mother and child. The severity of the effects, however, depends on factors such as the child's age at time of separation, length of separation, and the adequacy of the substitute situation. Robertson and Bowlby (1952) reported that if a separation was very long and the substitute situation provided inadequate mothering, the children were characterized by detachment and superficiality in their relationships including that with the mother on her return. The distress reaction to separation is found to be markedly attenuated if a substitute relationship can be formed or if the child is not removed from his habitual environment (Robertson & Robertson, 1971; Yarrow, 1961).

The results of such studies arouse several kinds of fears in parents, pediatricians, and others when considering the potential influence of day care on young children's emotional development. They fear: (1) that day care during infancy will disrupt the normal development of the mother-child attachment behaviors, (2) that entry into day care after attachment to the mother has taken place will result in a detachment and superficiality in the mother-child relationship similar to that observed after long periods of separation, and (3) that the child will develop as strong an attachment to the caretaker as to the mother, an outcome not acceptable to most Western mothers.

The results of an investigation by the Syracuse group (Caldwell, Wright, Honig, & Tannenbaum, 1970) has found no evidence of disruption of the normal mother-child attachment pattern with children who had entered day care before one year of age when tested at 30 months. When compared with a sample of home-reared infants, no differences were found in the attachment even though the day care children did show greater breadth of attachment. Day care infants responded positively to other adults more frequently than did home-reared infants.

Kagan (1973) has also reported that they found no evidence that day care during the infancy period affected the strength or quality of attachment nor was there any evidence that the child's relationship with the caretaker had in any way eroded the mother-child relationship. Even in a test situation in which the caretaker, mother, and a stranger were present, the 29 month old children directed most of their attention toward the mother. The day care children appeared to maintain physical proximity and visual contact with the mother as a means of controlling their anxiety to the same extent that home-reared children did.

Blehar (1973) found quite different results when she assessed the attachment patterns of 30 and 40 month old children. These children displayed defensive attachment patterns not found in the home-reared comparison sample. Those who started day care at two years of age (25 mo.) showed avoidant behavior when reunited with the mother in a separation test, while those who had entered day care at three years of age (35 mo.) displayed anxious, ambivalent behavior. Blehar suggested that disruption of the mother-child relationship by daily separation after two to three years apparently is more disruptive to attachment patterns than when the separation begins in early infancy as in the Caldwell, et al.

and the Kagan studies. Several differences between the studies besides age at onset of day care, however, make comparison difficult. The children in the Blehar study had only been in day care for four and half months at the time of testing while the Caldwell and Kagan subjects had been in day care for many months (in some cases two years). Daily separation may result in temporary disruption of the mother-child attachment pattern but regain normality. It may take several months for a child to become secure in the new environment and to be reassured that mother will indeed return each evening. Another factor related to length of time in day care may be the reaction of the mother to the separation. It is new for her as well as for the child. Because of her concern for the potential effects of separation, a mother frequently expresses disappointment is her child does not cry when left or seek contact upon her return. The middle class mothers in the Blehar study may have inadvertently expected and reinforced inappropriate behaviors, those classified as defensive attachment. Also the Blehar middle class mothers may have experienced more ambivalence about leaving the child than the less fortunate Syracuse mothers since their doing sc was probably by choice rather than necessity.

Another factor which may have accounted for the discrepancy in results between the Blehar and Syracuse study is quality of the care experienced by the child during separation. As noted by Blehar, the degree of individualization of the Caldwell program is not representative of the typical day care center, particularly those licensed only for children two and up. The staff to child ratio in most centers handling the toddler and preschool age child runs at best 1/6 and has been reported to be as high as 1/20 in some instances. It will undoubtedly take longer for a satisfactory relationship between child are caretaker with the poorer ratio.

The present study was designed to assess the influence of full-time day care on the attachment patterns of somewhat older children than included in the Blehar study. Our subjects ranged from 47 to 61 months of age. The use of the standard strange situation was not practical because of our day care sample size and also because of the older age of the children. It was assumed that with older children, separation itself probably would not elicit attachment behavior. This suspicion was supported by Marvin's (1972) developmental study of attachment behavior. For the older child the need for proximity with the parent is probably very situation dependent and not necessarily the normal response in most situations. Increasingly, one would expect the child to seek a sibling, playmate, the father, or other adults in some situations. For most American mothers, one of the desired goals of child rearing is a gradual decline in the dependence upon the mother and a gradual increase in the development of satisfying relationships with peers and other adults. It was not feasible within the time constraints of the project to actually observe each child's response in a variety of situations in which he might be expected to seek the help or proximity of mother, father, peer, caretaker, strange adults, etc. Such a multi-optioned situation would be difficult to engineer.

Our option for elicitation of the child's choice of a person to be with him in several situations was to present stories describing various hypothetical circumstances. The child was billed as the central character in each story and asked to tell whom he would want with him in each situation. He could name as many different people as he wished. It was assumed that persons mentioned by the child would be those most typically associated with the described situation. The task could be considered to be analogous to a word association task where the child is instructed to tell the first word he thinks of first immediately after being presented with the stimulus. For the independent child who has formed meaningful attachment to peers and other adults, one would not expect 100% mother responses as first choices across the stories. Giving 100% mother or giving 0% mother responses were interpreted as indicative of disturbed mother-child attachment.

Studies of the effects of separation during infancy have typically stressed the attenuating effect of an adequate substitute environment on the severity of the distress reaction. The family day care home by virtue of its maintenance of the family-like setting and the low caretaker to child ratio would seem to provide the conditions for adequate substitute mothering. The day care center on the other hand is usually based on a school model and is usually characterized by a higher child to caretaker ratio. Unlike the day care home, however, the center provides a unique social experience because of the large number of same age children. The child can surely find at least one other child compatible with his interests and temperament. In the family day care situation, there may be no same-age peer or there may be an accidental mismatch in same-aged children's interests and capabilities. If the FDC situation does in fact offer a more adequate substitute environment for the child than the center, one would expect fewer instances of defensive attachment (high mother or no mother choices). If the GDC situation tends to not only disrupt the mother-child relationship but at the same time strengthen child-child bonds, it would be expected that GDC children would give a substantially greater proportion of peer choices than would FDC or PC children.

Method

Task. Materials were a picture book and six accompanying stories. The stories described the subject as being Happy, Sick, Frustrated, Sad, Undecided, and Scared, respectively. A picture or line drawing accompanied each story. The pictures were intended to help put the child in the proper setting and also to help maintain attention. The complete stories and the pictures are presented in Appendix G.

While being seated at a small table, the subject was told that it was time for some stories, and that these would be very special stories all about him. The experimenter explained that she wanted the child to pretend that he was in the story. The child's name was used throughout the stories to facilitate the subject's task of pretending. Following each story the subject was asked whom he would want with him in that situation if he felt the emotion described in the story.

Since young children often fail to answer direct questions readily (in this case, about whom they would want with them), the experimenter probed the child before beginning the series of stories. She asked him to name people he knew, offering suggestions such as "how about your mom and dad; do you know them; do you have a grandma or grandpa; are there any grownups you know besides your mom and dad; what about your teacher - you know her don't you?" The experimenter probed and suggested until all the following categories had been mentioned: Parents, Caretaker (if applicable), Siblings, Cousins, Aunts and Uncles, Grandparents, Day Care Children (if applicable), Neighbor Children, and Non-family Adults. It was reasoned that this process would ensure that each child had available during the task the same repertoire of potential responses to the question, "Whom do you want with you?"

After each choice given to a story, the child was asked if there were any other people he would want with him in that situation. The relationship of the person named by the child (cousin, neighbor child, teacher, etc.) was determined if not known to the experimenter. All responses were recorded in the sequence given. The stories were presented in the same order for all subjects, the Happy story being first and the Scared story last.

Scoring. First responses were categorized for each story as one of the 16 possibilities listed in Table 30. All choices given to each story were categorized as one of the 23 possibilities also listed in Table 30. The percentage of each child's choices falling into each category was determined separately for the six Who Stories.

Results

Children's spontaneous remarks and recall of past experiences indicated that for most children the stories successfully evoked similar

TABLE 30

Categories for classification of Who Story choices

First Choice	All Choices
Non-Family Adult	Non-Family Adult
Police, doctor, nurse, etc.	Police, doctor, nurse, etc.
Experimenter	Adult friends
Caretaker	Experimenter
	Caretaker
	Babysitter
	Nursery School teacher
Parent	Parent
Mother	Mother
Father	Father
Mother and Father	Mother and Father
Adult Relative	Adult Relative
Aunt	Aunt
Uncle	Uncle
Grandmother	Grandmother
Grandfather	Grantfather
Peer	Peer
Sibling Cousin	Sibling
Day Care	Cousin
Non-Day Care	Day Care
	Non-Day Care
Other	Other
No-one	Elements of Who Story pictures
Other	TV or Book characters
	Monsters or Animals
	Imaginary Playmates
	Pets and Dolls

past experiences to use as a basis for responding. The Scared Story was particularly successful as evidenced by subject's short latency of response, their facial reaction, and their spontaneous remarks.

A summary of the percentage of children in each care group selecting each of the 16 categories as first choices is presented in Table 31.

Parent Choices. Parent was by far the most popular first response given. About 80% of the subjects mentioned either the mother or father as a first choice to at least one of the stories. When all choices were considered, 90% of the children were found to mention a parent on at least one story. The number of children in each care group giving one or more parent responses as a first choice and when all choices were considered is presented in Table 32. A significant relationship between care group and giving a parent choice was found both for first ($X^2 = 12.28$, $df = 2$, $p < .01$) and all choices ($X^2 = 13.45$, $df = 2$, $p < .01$). About a third of the FDC children failed to given even one parent response as a first choice, in contrast to only 9% of the GDC children. The PC group fell between with about 19% of the subjects failing to give even one parent choice. When all choices were considered, again more FDC (20%) subjects than GDC or PC (4.5% each group) failed to give even one parent response to the stories.

To determine whether the lower parent responding by FDC children was indicative of a low-mother or low-father orientation, a separate tabulation was made of the number of children in each care group giving no mother, no father, or no joint mother-and-father choices. Table 33

TABLE 31

Percentage of subjects in each care group and sex making one or more first responses to the six Who Stories in each of 16 categories.

Response Category	Males			Females		
	GDC	FDC	PC	GDC	FDC	PC
No-one	18.18	9.09	24.24	12.12	12.12	18.18
Mother and Father	27.27	30.30	36.36	60.61	39.39	24.24
Mother	57.58	36.36	48.48	57.58	48.48	57.58
Father	33.33	18.18	48.48	27.27	18.18	27.27
Caretaker	6.06	9.09	3.03	12.12	0.0	0.0
Aunt	6.06	0.0	3.03	0.0	12.12	3.03
Uncle	6.06	3.03	9.09	0.0	6.06	0.0
Grandmother	12.12	3.03	9.09	0.0	9.09	12.12
Grandfather	3.03	6.06	0.0	0.0	0	0.0
Experimenter	9.09	9.09	12.12	15.15	18.18	15.15
Sibling	45.45	18.18	33.33	27.27	30.30	15.15
Cousin	0:0	6.06	9.09	6.06	24.24	9.09
Peer (day care)	45.45	33.33	0.0	36.36	21.21	3.03
Peer (non-day care)	18.18	39.39	48.48	36.36	33.33	63.64
Nurse, Doctor, etc.	18.18	12.12	6.06	21.21	3.03	9.09
Other	9.09	12.12	15.15	15.15	12.12	24.24

TABLE 32

Number of children in each care group giving no parent (0) or giving one or more parent (1-6) responses as a first choice and when all choices were considered.

Number of Parent Choices	Care Group GDC	FDC	PC
First Choice			
0 Parent	6	22	12
1-6 Parent	60	44	54
All Choices			
0 Parent	3	14	3
1-6 Parent	63	52	63

TABLE 33

Number of children in each care group and sex giving no (0) mother, father, or joint mother and father responses and the number giving one or more (1-6) in each category as a first choice.

Choice	Males			Females		
	GDC	FDC	PC	GDC	FDC	PC
First Choice						
Mother						
0	14	21	17	14	17	14
1-6	19	12	16	19	16	19
Father						
0	22	27	17	24	27	24
1-6	11	6	16	9	6	9
Mother and Father						
0	24	23	21	13	20	25
1-6	9	10	12	20	13	8

presents the results of that tabulation for responses given as first choices. A separate partitioning of the chi-square was performed for each of the three-way contingency tables. These analyses allowed for assessment of possible Sex X Care Group X Response interactions. Although a smaller percentage of FDC than GDC or PC subjects gave one or more mother responses, no significant relationship between care group and giving a mother response as a first choice was found ($X^2 < 1$). A significant relationship between care mode and giving a father choice was found, however, ($X^2 = 6.36$, $df = 2$, $p < .05$). Fewer FDC subjects than PC or GDC children mentioned the father as a first response to one or more stories. A significant relationship between care group, sex, and giving a joint mother and father choice was also found ($X^2 = 7.37$, $df = 2$, $p < .05$). Subsequent analyses revealed a significant relationship between giving a joint response and care group only for the females. Among the females, the smallest proportion of joint choices was given by PC girls (25%) with 60% of the GDC girls and 39% of the FDC girls giving one or more joint mother and father choices.

In summary, the lower proportion of FDC children giving parent choices as first responses cannot be interpreted as indicative of weakened mother-child relationships. Instead, it was found that fewer FDC children mentioned the father or the father jointly with the mother as a first choice. Since the care groups were matched for father absence, the effect cannot be accounted for on that basis.

It should be noted that despite the fact that fewer FDC than GDC or PC children gave at least one parent choice, the majority of FDC children did give one or more (66% as first choice and 79% on all choices). The results also do not imply that PC or GDC children were excessively parent oriented. No relationship was found between care group and giving more than half parent choices (4 out of 6 stories) as first choices. Also care group was not found to be a significant factor in a three-way analysis of variance for care group, sex, and story on the mean percentage of all choices that were parent ($F = 2.01$, $df = 2/192$, $p < .14$). Only story was found to be a significant factor ($F = 21.84$, $df = 5/960$, $p < .001$).

The mean percentage of choices that were parent is presented in Table 34 for each story separately. The lowest percentage of parent responses was given to the Happy story and the highest percentage was given to the Scared story. The differential response to the stories suggests that they successfully elicited distinct experiences for the children. The fact that the Scary story was last but elicited a higher percentage of parent choices than other stories also suggests that response set was not strong. It had been feared that a child would tend to give the same response to all stories, showing little sensitivity to the specific situation described. Most subjects, however, were found to use at least two categories, and several (27%) used as many as four of the five main categories (non-family adult, parents, adult relative, peer, and other).

The fact that a higher percentage of the children's responses were parent choices when a scary situation was described and lowest when nothing but happiness and bliss was described lends support to the

TABLE 34

Mean percentage of parent choices given to each Who Story by each care group and sex.

Who Story	Care Group			Sex	
	GDC	FDC	PC	Male	Female
Happy	15.89	13.57	15.00	15.23	14.41
Sick	38.64	34.05	37.87	35.54	38.16
Frustrated	33.56	29.72	33.74	31.19	33.49
Sad	42.44	28.89	29.42	35.95	31.22
Undecided	47.04	34.37	31.13	43.61	31.42
Scared	55.20	44.42	40.13	47.81	45.36
Mean percent	38.79	30.84	31.21	34.89	32.34

Note. - Based on all choices given.

interpretation of high parent responding as an index of adult dependency. The desire for mom and/or dad in a scary situation (lost in the woods) is an expression of dependency that most of us would view as normal for a four year old, however. Particularly interesting were the cases where a child had not given one parent choice on the preceding stories, but could think of no-one but dad as a choice on the scary story. Often the children would spontaneously offer a comment such as, "My daddy will shoot the monster with a gun." Perception of the father as an all-powerful protector was prevalent. Father-absent children would sometimes suggest that maybe a policeman would come to their rescue or would confidently state that their mother would come.

Based on the ordering of mean percentage of parent choices and on the frequency of subjects in each group giving no parent choices, the ordering of the groups from most parent oriented to least would be: GDC > PC > FDC. Maternal separation was apparently not the important factor underlying the differences found in the frequency of children mentioning one or both of the parents. Both FDC and GDC children experienced daily separation, yet they responded differently to the stories. Since the PC group fell between the two day care groups in the number of subjects mentioning the parent as first choice, interpretation of the lower FDC frequency of parent mentions as an indication of independence seems reasonable (assuming the PC group provides a baseline for parent responding). The finding of a greater number of high curiosity profile children in FDC than GDC or PC would also tend to support the independence interpretation. The correlations between the percentage of parent responses given to each story and the Curiosity compositive scores (toy box task) failed to reach significance, however. Even looking just at FDC males who were found to have the fewest parent responders as well as the fewest low curiosity children, no relationship was found between curiosity and giving a parent response. Of the six FDC males who had low curiosity compositive scores, half gave no parent responses and half gave one or more.

The independence interpretation of the lower parent orientation among some FDC subjects, however, did receive support from the Child Behavior Rating data based on behavioral ratings made by teachers, day care mothers, and mothers of the child(ren) in her care. The Self-sufficiency cluster was found to be related to the percentage of parent choices given by FDC subjects to the Frustrated Story ($r = .30$, $p < .05$). Those FDC children who did not mention the parent as a source of help when a puzzle was too difficult were likely to be those children who were rated as ones who settle their own quarrels and do not seek adult aid when hurt.

Parent Choices and Years in Day Care. Blehar (1973) found not only that children in day care revealed more defensive attachment behavior than home-reared children in a standard stranger task, but that the type of defensive attachment pattern was related to age of entry into day care (20 vs. 35 months). To assess the influence of number of years in day care on attachment patterns, a tabulation was made of the number of children in each care group making a parent response to at least five out of six of the stories. Such a pattern of responding was assumed to indicate a high parent orientation for a four year old. There was no overall care group relationship with giving many parent responses. However, when the percentage of subjects giving at least 5 out of 6 parent responses was determined separately for children who had been in day care less than two years (at least 2 years of age at entry) and those who had been in day care more than two years (less than 2 years of age at entry) an interesting pattern of results was found. As can be seen in Table 35, approximately a quarter of subjects in the PC group and in FDC, early and late entry, group gave a parent response to at least 5 stories. The number of years in day care apparently had little influence on the proportion of children in FDC who gave many parent responses. Among GDC subjects, years in day care was found to be significantly related to giving a high number of parent choices ($X^2 = 6.87$, df = 1, $p < .05$). Half of the GDC children who had entered day care late gave a parent response to at least 5 of the stories, while only about a fifth of the GDC subjects who had started day care early gave a parent response to that many stories. It is interesting to note that the only day care sub-group deviating from the PC group in parent orientation (i.e., GDC later entry subjects) was made up predominately of children with no FDC experience (66% had none). Nearly all (95%) of the early entry GDC children had family day care experience prior to entry into a day care center. The family day care experience may have provided the emotional support needed to foster normal independence. Assuming that the percentage of parent oriented children in the PC group to be representative of "normal" four year olds, the groups with family

TABLE 35

Percentage of early- and late-entry day care children giving a parent choice to at least 5 out of 6 Who Stories

Care Group	Years in Day Care		
	0 (no day care)	1-2 (late-entry)	3-5 (early-entry)
GDC	-	50.00	19.44
FDC	-	24.14	29.73
PC	27.27	-	-

day care experience appear most comparable in the percentage of high parent-oriented children. Unfortunately, a group of early entry children with only day care experience was not available for comparison with the early entry family day care children. Infant centers were not yet common enough to provide for a sufficient sample of four year olds in the Seattle area.

Peer Choices. Daily contact with peers in either a family day care center atmosphere would be expected to result in the formation of strong attachment to same-age children. Because of the number of children in the same setting, children in centers have an especially good chance of finding a playmate who had similar interests and capabilities. We expected to find a strong peer-orientation among day care center children.

The number of children in each care group giving no peer choices is presented in Table 36 for both first choice and all responses. Parent responses predominated as first choices, but peer rivaled parent when all choices were considered. About 37% of the children gave at least one peer choice as a first response, and 91% gave at least one when all choices were considered. No relationship between care group and giving no peer choices was found for either first or all choices, contrary to expectation ($X^2 < 1$). About 27% of the subjects gave a peer response as a first choice to over half of the stories (at least four out of six) but not relationship between care group and giving predominately peer choices was found ($X^2 < 1$).

The absence of a care group difference in peer orientation was also

TABLE 36

Number of children in each care group giving no peer (0) and giving one or more (1-6) as a first choice and on all choices.

Number of Peer Choices	Care Group GDC	Care Group FDC	Care Group PC
First Choice			
0	25	23	26
1-6	41	43	40
All Choices			
0	7	4	6
1-6	59	62	60

TABLE 37

Mean percentage of peer choices given to each Who Story by each care group and sex.

Who Story	Care Group			Sex	
	GDC	FDC	PC	Male	Female
Happy	65.11	66.19	58.54	60.43	66.13
Sick	36.49	41.61	41.85	41.27	38.69
Frustrated	42.90	52.40	45.18	46.95	46.70
Sad	33.32	46.32	44.82	37.21	45.77
Undecided	31.48	46.89	41.64	34.06	45.94
Scared	24.75	30.51	35.32	26.58	33.80
Mean percent	39.01	47.32	44.56	41.08	46.17

Note. - Based on all choices given.

confirmed by analysis of variance of the mean percent of all responses that were peer. The three-way analysis of variance for care group, sex, and story revealed only a significant story effect ($\underline{F} = 23.62$, $\underline{df} = 5/960$, $\underline{p} < .001$). The mean percentage of choices that were peer on each story is presented in Table 37. The highest percentage of choices were peer on the Happy story and the lowest percentage on the Scared story (the opposite was true for parent choices).

There was definitely no evidence based on children's giving peer choices to the Who Stories that home-children were less peer oriented than day care children. Most of the home-reared children lived in "child infested" neighborhoods and at four years of age were old enough to be allowed considerable freedom. Many spent long periods each day in the company of neighborhood playmates. They apparently formed social relationships that were as salient to them as those formed in day care were to GDC and FDC children. One might expect that less similarity between care groups in peer orientation would be found with younger subjects. A two year old in day care typically experiences considerably more peer exposure than does a two year old at home. By four years of age, however, most home-reared children have had the opportunity to form strong peer attachments.

Peer Choices and Years in Day Care. Interestingly, the longer children were in day care the less peer oriented they became. Table 38 presents the percentage of early- and late-entry day care children mentioning peers on at least five of the six stories. About half of the children who had been in day care for only one to two years mentioned

TABLE 38

Percentage of early- and late-entry day care children giving a peer choice to at least 5 out of 6 Who Stories.

Care Group	Years in Day Care		
	0 (no day care)	1-2 (late-entry)	3-5 (early-entry)
GDC	-	43.3	22.2
FDC	-	55.2	32.4
PC	45.5	-	-

peers on five of the six stories, a proportion comparable to that found in the PC group. The surprising finding was that only about a quarter of the early-entry day care children mentioned a peer on five of the six stories. The relationship between peer-oriented responding and years in day care was significant ($X^2 = 5.72$, $df = 1$, $p < .05$).

Non-Day Care Peer Choices. Sibling and neighborhood children were both possible subcategories of peer choice for all subjects. Day care peer, however, was not a possible category for the PC group. To determine what influence day care might have on the pattern of relationships with non-day care peers, a tabulation was made of the number of children giving one or more sibling and one or more neighborhood choices. The results of that tabulation of first choices are presented in Table 39. No relationship was found between care experience and giving a sibling choice as a first response. A significant relationship, however, was found between care group and giving a non-day care peer (neighborhood) choice ($X^2 = 11.92$, $df = 2$, $p < .01$). Apparently, being in day care limited the amount of contact and the strength of relationships with children who were not in day care, i.e., neighborhood children. About 73% of the GDC children failed to mention at least one neighborhood child as a first choice in contrast to 44% of the home children. When all responses were taken into consideration, the same pattern was evident: few center children but nearly all home-reared children mentioned a neighborhood child.

Non-family Adults. Because day care children are in daily contact with adults other than the parents, one might expect that they would be

TABLE 39

Number of children in each care group and sex giving no sibling (0) and the number giving no neighbor child (0) responses as first choices.

Peer Category	Males			Females		
	GDC	FDC	PC	GDC	[illegible]	PC
Sibling						
0	18	27	22	24	23	28
1-6	15	6	11	9	10	5
Neighbor Child						
0	27	20	17	21	22	12
1-6	6	13	16	12	11	21

more likely than home-reared children to show some orientation to adults other than the parents. At least, one would expect that they would show some orientation toward the center teacher or day care mother. Less than half of the children were found to give a non-family adult response even when all choices were taken into consideration. The number of children in each care group and sex giving one or more non-family adult choice is presented in Table 40. Partitioning of the chi-square revealed a significant interaction between care group, sex, and giving a non-family adult response ($X^2 = 6.00$, $df = 2$, $p < .05$). Breakdown analyses of the interaction revealed that among males, fewer PC than FDC males gave non-family adult choices (30.3% vs. 54.5%). Also fewer PC males than PC females mentioned one or more non-family adults. Home-reared boys apparently were primarily parent and peer oriented, while home girls and day care children of both sexes were somewhat more likely to have formed relationships with non-parent adults that were salient enough to mention on the Who Story task. Thus, the expectation that day care children would show a higher orientation to non-family adults than home children was in part confirmed.

Correlations of the percent of choices that were non-family adult with the seven cluster scores derived from the Child Behavior Ratings made by caretakers revealed some interesting relationships. The only overall correlation based on combined care groups which reached significance was the relationship between giving a non-family adult choice to the Sad Story and being rated as a cooperative child ($r = .27$, $p < .01$). One of the components of that cluster was an item dealing with whether

TABLE 40

Number of children in each care group and sex giving no (0) non-family adult or giving one or more (1-6) on all choices.

Number of Non-Family Adult Choices	Males			Females		
	GDC	FDC	PC	GDC	FDC	PC
0	17	15	23	16	21	15
1-6	16	18	10	17	12	18

or not adults enjoyed being around the child. It is not surprising that a child who is perceived by adults as enjoyable to be around would be more likely to be oriented to non-family adults.

Another correlation of interest was a relationship between the percentage of non-family adult choices and the Self-sufficiency cluster score for PC children ($\underline{r} = .33$, $\underline{p} < .05$). If the mother rated the child as tending to take care of his own battles and to perhaps be a little bossy with his friends, he was more likely to also be a child who mentioned a non-family adult.

Caretaker Choices. One subcategory of non-parent adult choices was caretaker, i.e., the center teacher or day care mother. One of the most surprising results of the Who task was the low mention of the caretaker by day care children. Even though the testing took place at the day care mother's home, only 5% of the FDC children made even one mention of the day care mother. Similarly, only about 10% of the GDC children mentioned the teacher as someone they would want with them. There certainly was no evidence that the caretaker had in any way replaced the mother and father as important figures in the children's lives.

It was expected that particularly on an item dealing with frustration over a difficult puzzle (Frustrated Story), the caretaker would be at least as frequent a response as the parent. The described situation would be more frequently encountered for many day care children in the center or day care home than in their own home, yet they made few caretaker choices. About 40% gave a parent choice and less than 4% mentioned the caretaker as a first choice. Siblings and parents were the predominant choices.

The failure to mention the caretaker is probably best interpreted as an indication that the importance of the parent to the child as a source of help was not weakened by day care, not as an indication of lack of attachment for the caretaker. Apparently, if the story suggests the need for an adult, that adult will typically be one or both of the parents. Although no systematic data was collected, the testers noted that the center or family day care child who clung to the caretaker and was reluctant to enter the van, was likely to give predominately parent choices. His dependent relationship with the caretaker was not evident in his choices, but the high frequency of parent choices was indicative of his dependency. This interpretation is consistent with the preliminary results with younger children reported by Kagan (1973). When both caretaker and mother were present in a strange situation, children oriented to the mother not the caretaker.

Summary. In general, the results of the Who Stories indicated that home-reared children were not overly parent oriented and that day care children were not excessively attached to the caretaker or to peers. In fact, the most parent oriented children were found among the late-entry GDC children and fewest peer oriented children were found among the early-entry FDC and GDC children.

CHAPTER 8

SELF-CONCEPT

In the process of continual interaction with the environment the child forms impressions about himself. One aspect of the child's interaction involves his explorations of the physical environment and the feedback he obtains about his effectiveness in effecting desired changes in that environment. The importance of opportunities to assert himself and to effect changes in the environment for the development of a favorable self-concept has been pointed out by several investigators (e.g., Beller, 1971; Lewis & Goldberg, 1969). Another aspect of the child's interaction with the environment relates to the feedback that the child gets about himself from others. Coopersmith (1967) describes the mothers of children with high self-esteem as high in self-esteem themselves, as supportive and warm, as valuing the opinions of their children, as consistent in their enforcement of limits and standards placed on behavior, etc. In contrast, the mother of the low self-esteem child tends to deprecate the child and treat him as a burden.

A favorable self-concept, or the child's judgment of his worthiness, has been found to affect many aspects of the child's life. Coopersmith found that children having high self-esteem were more accepting of their own opinions, tended to trust their own reactions, showed greater social independence, greater creativity, etc. Minuchin (1971) found children with positive self-images showed more active exploratory behavior. In addition, it has been shown that children with positive self-concepts make better initial adjustments to school and make better academic progress (Blendsoe, 1964; Engel & Raine, 1963; Piers & Harris, 1964; Wattenberg & Clifford, 1964). Self-esteem has also been found to be related to perceived masculinity-femininity or sex-role identity, with self-reported femininity being associated with poor self-concepts in both girls and boys (Sears, 1970).

The importance of the nature of the child's early feedback and opportunities for interaction with his environment for the development of a positive self-concept places a burden on the caretaker. The caretaker plays an important role in providing opportunities in which a child may test his powers for affecting his environment; in the valence of his evaluative comments of the results of the child's efforts; and in the comments made about the child's appearance and general worth (Pavenstadt, 1968). Because of the differences in experiences provided in the day care and home environment for the young child, there is reason to be concerned about the effects of group care on the child's self confidence (cf., Zigler, 1970). Does the group care situation provide opportunities for the child to test the limits of his skills? Is it possible for the teacher to note opportunities to give support to the child who is somewhat less competent than his age-mates, who is not attractive, or who is not immediately a likable child? Does the child perceive daily separation from the parent as rejection? Although these specific questions were not addressed, an attempt was made to assess the influence of the global variable, day care experience, on self-concept.

Method

Task. The self-rating task used was adapted from the Where Are You Game developed by Engel and Raine (1963). The procedure was found to differentiate well among third grade subjects and had a test-retest reliability estimated to be .60. Several modifications of the task were necessary to make it suitable for administration to preschool children, however.

Materials for the task included an eight page book and a sliding wooden face. A diagram of a page and the wooden face is presented in Figure 2. Each page of the book was ruled into five vertical columns, each of which contained a schematic paper face of a hypothetical child. The five faces on a page were used to represent a continium on each of eight dimensions of self-concept: Friends-No Friends; Sad-Happy; Brave-Fearful; Ugly-Pretty; Strong-Weak; Bad-Good; Smart-Dumb; and Rejected-Accepted. The far left and right columns on each page represented the positive and negative extremes of each dimension. The middle column represented a hypothetical child who was average or moderate on the dimension.

Each of the faces on a page was a different color construction paper to aid the child's discrimination of the points on the continium within a page. The colors on successive pages were systematically varied to help eliminate any tendency to carry-over the dimension described on one subscale to the next subscale. Although some children initially responded on the basis of a preferred color, they were successfully instructed to choose on the basis intended. The placement of a face in each column, the use of color to aid discrimination, the use of a horizontal rather than vertical continium, and the use of sliding wooden face were all modifications of the task developed by Engel and Raine. A horizontal continium was used because it more closely paralleled the common gesture made by both children and adults when emphasizing the

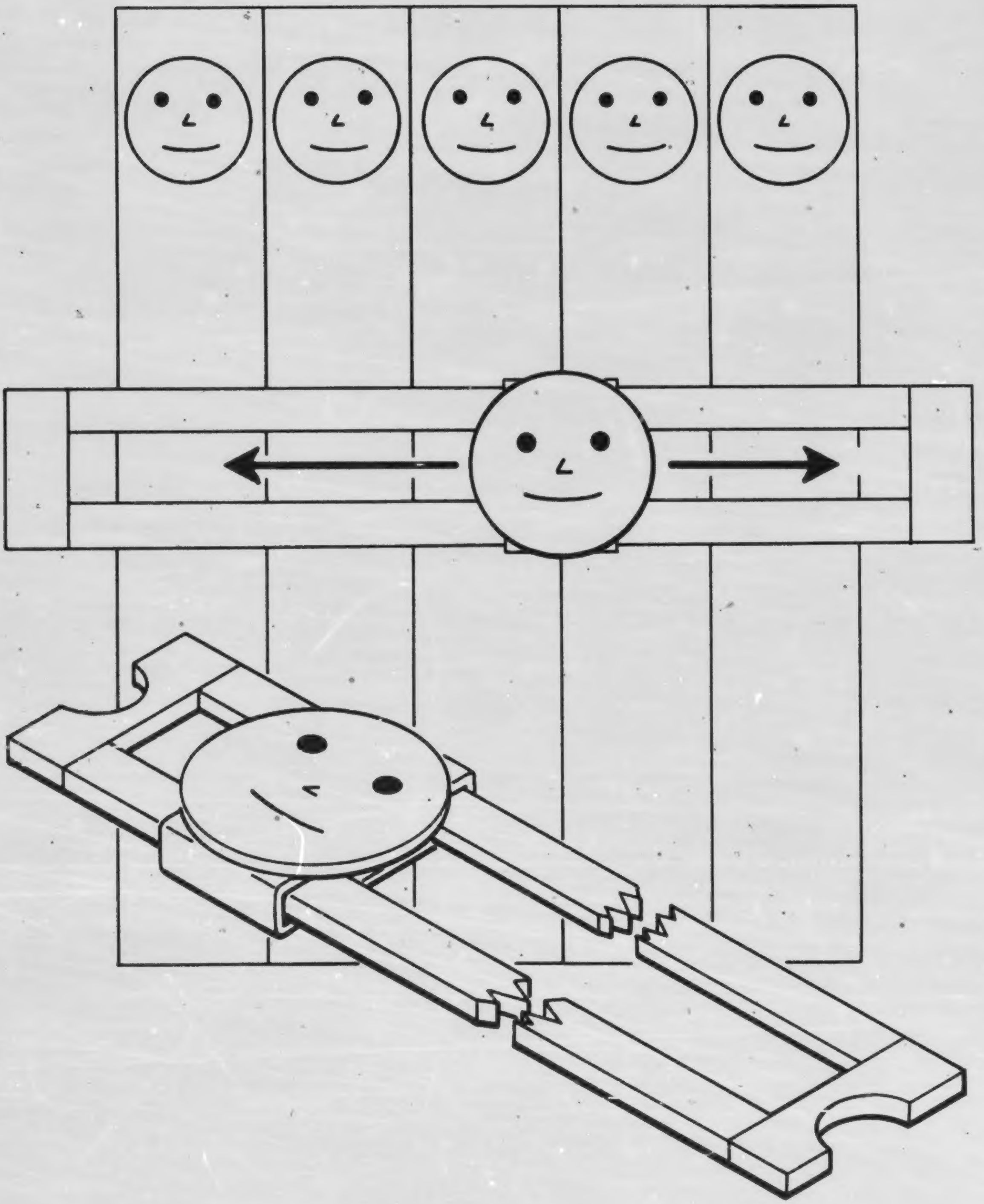

Figure 2. Sample Face Game page and schematic of the sliding wooden face.

largeness or smallness of an object or the importance of an event (or when telling a fish story). The sliding wooden face was added to the task to provide a motor response more appropriate for preschool children than marking an X with a pen. Also, it was thought that the sliding motion itself might aid in the child's grasping the notion of a continium.

As the experimenter described each hypothetical child on a subscale, the subject was asked to slide the wooden face to the column of the child being described in order to ensure that the subject focused his attention on each face and also to give the subject something to do with his hands while the tester talked. The predetermined descriptions for scale points of the eight subscales are presented in Appendix H. A sample item in which figures of varying height were shown, was used as a practice item.

The faces were described from left to right for all subscales but the socially desirable extreme was described first on half of the items and last on half. After all the faces on a page had been described, the subject was asked to show the experimenter which child (face) sounded as if the experimenter had been talking about him (subject). Care was taken to avoid the use of the expression, "...which is like you?" that had been used by Engel and Raine. It was found that with that instruction, preschool children tended to interpret the task as one of selecting the person they liked or would like to be rather than the one that they thought was them. The subject was asked to make his rating by pointing to or placing the wooden face under the face of the child that was him. The subject was cautioned that he must tell the truth, and that he most point to the face that was really him, not just the one he would like to be. The subject was required to explain why he had selected a particular face. No score was assigned until the subject's verbalization of himself matched the hypothetical child described by the experimenter, with a few exceptions (a few children failed to spontaneously verbalize on any task). If a child chose the socially desirable extreme of the scale immediately after the description, the tester probed with a question such as, "Are you really smart all the time?" and then pointed to the adjacent face and said, "This boy/girl is pretty smart too, but he's not the smartest one; do you think that could be (child's name)?" If the child maintained that he was indeed the smartest one, the child's original response was recorded. Descriptions of the faces on a given subscale were repeated as many times as necessary for the child to reach a conclusive response.

Scoring. The following three measures were derived:

1. Self-rating. Each subject's self rating was coded using a 5-point scale. The socially desirable extreme was given a score of 5 and the undesirable extreme a score of 1. Total scores ranged from 8 to 40, with a high score indicating a positive self-concept.
2. Number of non-5 choices.
3. Number of different numbers used by subject.

Results

Differentiation. There is relatively little research on the preschool child's self-concept primarily because of measurement problems. Many studies of self-concept have relied on the Q-Sort, adjective check lists, or projective tests for assessment, procedures that are not practical with preschool children.

To determine the extent to which the instrument used in the present study was sensitive to the various dimensions of self-concept, two measures of differentiation were derived: the number of non-best choices and the number of different scale points used. Because of the young age of the subjects, we had only moderate expection of differentiation. Surprisingly, less than 10% of the subjects rated themselves as best on all subscales. The overall mean number of non-best choices on the eight subscales was 3.24. Some subjects made as many as 7 out of 8 non-best choices. Degree of differentiation of self as indexed by the number of non-best choices was not found to be related to care experience or sex ($\underline{p} < .10$). The absence of differences between day care and home children suggests two things: (1) forced exposure to peers is not essential for the child to receive the kind of feedback necessary to learn that he is not in fact the best in all dimensions, and (2) overall differences between care groups or sexes cannot be interpreted as simply reflecting different degrees of self-awareness.

The second measure of the degree of differentiation also revealed no sex or care group differences. It was found that sunjects used a mean of 2.90 of the five scale points in responding to the eight scales, indicating again that subjects were not fixating on the socially desirable extreme of the scale.

Differentiation was also evidenced in muscular and facial cues. When a subscale struck a "sore point" with a child, it was usually written all over his face. Especially noticeable was the change in muscle tension in the neck. This "tensing up" never accompanied a rating at the socially desirable end of the scale. Positive responses were more likely to be accompanied by a broad smile and exclamation such as, "That's me. I'm the smartest one!"

A tabulation was made of the few cases in which defensive responding was evident. About 2% of the subjects showed clear, unquestionable evidence of defensiveness. Another 6.5% showed some defensiveness but those instances were not as confidently rated by the tester. The defensive children were about equally distributed in the three care groups.

Self-rating. The basic question of interest was whether or not children in day care showed evidence of having been provided with the attention and emotional support necessary for the development of a positive self-image. The mean rating for each care group and sex is presented in Table 41 for each subscale separately. A 3 X 2 X 8 analysis of variance for care group, sex, and subscale revealed only a significant subscale main effect and a Subscale X Sex interaction ($F = 12.86$, $df = 7/1344$, $p < .001$ and $F = 2.23$, $df = 7/1344$, $p < .05$, respectively). To determine which subscales had significant sex differences, a separate analysis of variance for sex was performed on each subscale. Males and females were found to differ significantly only on the Strength subscale, with males rating themselves as stronger than females rated themselves.

The absence of care group effects on the Happiness and Mother Acceptance scales was particularly interesting. If the day care experience were an emotionally upsetting, negative experience for children, one would have expected children to rate themselves lower on happiness and mother acceptance than home children. Day care children did not produce ratings which would indicate that they perceived their mothers

TABLE 41

Mean self-rating for each care group and sex on each of eight Face Game scales.

Self-Concept Subscale	Care Group			Sex	
	GDC	FDC	PC	Male	Female
Friends-No Friends	3.85	3.74	3.71	3.89	3.65
Happy-Sad	4.27	4.08	4.17	4.08	4.26
Pretty-Ugly	4.65	4.74	4.67	4.66	4.72
Strong-Weak	4.03	4.20	4.21	4.39	3.90[a]
Good-Bad	4.26	4.38	4.18	4.29	4.25
Smart-Dumb	4.06	4.00	4.08	4.03	4.06
Brave-Fearful	4.08	3.76	3.79	4.05	3.70
Accepted-Rejected	4.12	4.35	4.12	4.23	4.16

[a] Significant sex main effect ($\underline{p} < .05$).

as any more or less accepting than did children who were at home with their mothers all day, every day.

Number of Years in Day Care. Many of the children in the day care sample had been in day care for more than two years, some as long as four years eleven months. It might be suspected that long experience in any situation would tend to either accentuate or attenuate (difficult to predict which) the potentially negative effects of maternal absence on self-concept and on perceived maternal acceptance. To determine if children who had entered day care after the age of two differed in their self-ratings from those who started later, an analysis of variance for care group (GDC, FDC), sex, and number of years in day care (1-2, 3-5 years) was performed (based on 81 matched pairs). No significant main effects or interactions were found (all Fs < 1) suggesting that children who were late in entering day care did not suffer any greater doubts about themselves or about maternal acceptance than did children who began day care in infancy.

Father Absence. Many children were in day care because there was only one parent in the home. If she worked or went to school, she necessarily placed her child in some type of day care situation. The purpose of the present analysis was to determine if the day care experience differentially affected children from one- and two-parent families with respect to self-image and perception of maternal acceptance. An analysis of variance for care group, sex, number of parents, and subscale was performed. Care group did not interact with number of parents, but a significant Sex X Number of Parents X Subscale interaction was found. Subsequent analyses for each subscale separately revealed significant Sex X Number of Parents interactions on the Happiness and Braveness subscales ($F = 5.27$, $df = 1/186$, $p < .025$ and $F = 8.25$, $df = 1/186$, $p < .005$, respectively). On both subscales one-parent males and two-parent females rated themselves more positively than did two-parent males or one-parent girls. A similar pattern was also found on the Strength scale and for boys only, on the Mother Acceptance scale, but apparently the pattern was not as consistent since the Sex X Number of Parents interactions were only marginally significant ($ps < .10$). Mothers may tend to be more attentive to a male child when there is no father, resulting in an increased perception of maternal acceptance and of self as happy, brave, and strong. Apparently it is not necessary for the mother to be absent for the female to benefit from the attention of the opposite sex parent with respect to self-rated happiness, braveness, or strength. That the positive effect on the two-parent girls' self-esteem was probably directly related to the attention from the father rather than the mother is suggested by the fact that father presence had little influence on perceived maternal acceptance of two-parent girls.

Conclusion. The absence of evidence for negative effects of the day care experience on the self-concept and perception of maternal acceptance with preschool children is consistent with the conclusions reached by Wallston (1973) in a recent review of the effects of maternal employment on children. Wallston summarized the preschool literature with the statement: "There seems to be no direct evidence of harmful effects of maternal employment on young children." One reason may be that the potentially negative effects on self-esteem of maternal separation required when the mother works are counteracted to some extent by the very fact that the mother works. Coopersmith (1967) has reported that working, particularly at a satisfying job, is a factor which contributes to high self-esteem in women. It is not surprising that he also found that mothers of high self-esteem children were more likely to have worked for long periods than were mothers of low self-esteem children.

A second possible reason for the absence of evidence for negative effects of day care on a child's self-esteem may harken to the often quoted proverb that it is quality not quantity that counts. Many of the working mothers in our sample reported that they make a concerted effort to spend the evening hours and weekends doing special things with their children (based on the interview data). A shorter time of greater attentiveness may prove to be in some respects the optimal conditions for the development of self-acceptance. The evidence at least suggests that whatever working parents do when they are home is sufficient to counteract any negative influence of the long hours of separation. That the mother's being at home may not necessarily result in a greater amount of interaction between mother and child is indicated by the results of a recent study. Rossi (1972) found that mothers who stay at home spend the majority of the day engaged in household chores and that on the average they spent less than two hours per day in direct interaction with their children.

CHAPTER 9

HUMAN FIGURE DRAWINGS: SELF-CONCEPT, SEX ROLE, AND ADJUSTMENT

The Draw-A-Person procedure was used in the present study to provide indices of sex-role orientation, self-concept, and emotional state. It should be noted that Harris (1963) among others has cautioned against use of the DAP for the assessment of variables other than intelligence. A review of the human figure drawing literature by Swensen (1968) would suggest that Harris' pessimism about use of the drawings for making clinical judgments is not unwarranted. Many studies have failed to find any relationship between characteristics of drawings and independent measures of body concept. Not all studies have failed to find relationships, however. Size of drawings, sex of first drawn figure, and global ratings of maladjustment have been found by other researchers to be related to independent measures of self-esteem, sex orientation, and emotional disturbance. The studies relevant to the interpretation of the results presented in the present study will be discussed in each subsection.

One difficulty in interpretation is common to all non-intelligence measures based on the DAP: Is it really possible to separate drawing ability from indices of adjustment? This problem of how quality of the drawing might influence judgments of adjustment is present whether dealing with adult or child subjects. With very young children, as were tested in the present study, the problem of partialling out the effects of quality of drawing was particularly great. Most children were able to at least make crude approximations to the human figure, but there was considerable variability in general skill with a pen and marked differences in experience in drawing human figures. An interpretation of defensiveness was not warranted in a situation where the child was having difficulty managing the pen, let alone drawing a human figure. The most articulate drawings were typically drawn by females who also could write letters and words with considerable control.

Swensen has pointed out that because the more complex drawing allows for the possibility for production of more signs of emotional disturbance, caution must be exercised when making comparisons between groups of subjects whose drawing ability differs. Since it was expected that center children might be more practiced drawers, emphasis was placed on Care Group X Drawing interactions when possible in the present study. It was reasoned that if the care groups did not differ on at least one of the three drawings on a particular measure, then obtained care group effects on another of the drawings could not be interpreted as due to general drawing ability. In an attempt to minimize the influence of drawing ability on measures of articulation, sex-detail, or emotional disturbance, scoring was very liberal. Because of the young age of the children, some features typically classified as indices of emotional disturbance (e.g., missing limbs, gaping mouth, transparency) were overlooked. Also the criteria for the articulation measure were considerably more liberal than the Harris-Goodenough criteria. We were more interested in whether a child attempted to represent a body detail than in the degree of sophistication of his representation.

Method

Task. The subject was seated at a table. He was given a blue felt-tip pen and a booklet containing three pieces of white 8-1/2 by 11 inch paper. The child was told that the experimenter would like him to draw some pictures of people. On the first piece of paper the child was simply instructed to draw a person. On the second page the child was asked to draw a person of the opposite sex of the first drawn person. On the last page the child was asked to draw a picture of himself. After each drawing the child was praised for his work and asked to tell the experimenter all about the picture. Each body part was labeled, the sex of the drawing determined, and the identity of the person, if anyone specific, was determined. If the subject spontaneously drew himself as the first person, he was asked to draw an opposite sex drawing as his second, and a same sex drawing as his third.

After all the drawings had been completed,the child was asked to imagine that he could choose whether he were a boy or a girl and to make a choice. He was then asked to tell what would be good about being his sex choice and what would be disagreeable about being the rejected sex.

Scoring. Because of the large number of measures derived from the drawings, the scoring procedure for each is described in the appropriate subsection of the results.

Results

Articulation. The number of features present in each drawing was scored by assigning 1 point each time one of the characteristics listed in Table 42 was present, irrespective of the quality of representation. Group and sex comparisons on the articulation scores were made to determine whether the sex-detail, self-concept, and emotional disturbance results would have to be qualified. That is, if care group or sex differences were found on overall articulation, it would suggest that differences in drawing skill and/or intelligence might be influencing the results of other measures. Analysis of the articulation scores was also aimed at discovering possible care group, sex, or number of parent interactions with drawing (male, female, self). Of particular interest was whether the day care experience might facilitate the development of opposite-sex and/or self body concept. If the type of peer exposure children experience in day care leads to such facilitation, it would be expected that day care children's drawings of the opposite sex and self, but not the same sex, would be disproportionately more articulate than those drawn by home children.

A four-way analysis of variance was performed on articulation scores to assess the effects of care group, sex, number of parents, and drawing. The sex main effect was found to be significant ($\underline{F} = 15.18$, $\underline{df} = 1/186$, $\underline{p} < .001$) and did not interact with other factors. The finding that girls drew more detailed figures for Male, Female, and Self suggests that interpretation of any sex differences

TABLE 42

DRAW-A-PERSON ARTICULATION CHECK LIST

MALE	FEMALE	SELF	
____	____	____	HEAD
____	____	____	NECK
____	____	____	EYES, ONE OR BOTH
____	____	____	EYE, PUPIL PRESENT
____	____	____	EYEBROW OR EYE LASHES PRESENT
____	____	____	NOSE
____	____	____	NOSE, NOSTRILS
____	____	____	MOUTH
____	____	____	MOUTH, DOUBLE LINE
____	____	____	MOUTH, TEETH
____	____	____	CHIN, SPACE
____	____	____	CHIN, SPECIFIC REPRESENTATION
____	____	____	FOREHEAD, SPACE
____	____	____	FOREHEAD, SPECIFIC REPRESENTATION
____	____	____	HAIR, ANY ATTEMPT
____	____	____	HAIR, ATTEMPT TO INDICATE STYLE, CURLS OR BOWS
____	____	____	EARS
____	____	____	FINGERS, ANY #
____	____	____	FINGERS, CORRECT #
____	____	____	OPPOSITION OF THUMB SHOWN
____	____	____	HAND, DISTINCT FROM FINGERS
____	____	____	WRIST OR ANKLE
____	____	____	ARMS, ANY #
____	____	____	ARMS, CORRECT #
____	____	____	ARMS, DOUBLE LINE RATHER THAN STICK
____	____	____	SHOULDER, ANY ATTEMPT
____	____	____	ELBOW, ANY ATTEMPT
____	____	____	ARM, AT LEAST ONE ENGAGED IN ACTIVITY OR AT SIDE
____	____	____	LEGS, ANY #
____	____	____	LEGS, CORRECT #
____	____	____	LEGS, DOUBLE RATHER THAN STICK
____	____	____	FEET, SEPARATE FROM TOES
____	____	____	TOES, ANY #
____	____	____	TRUNK
____	____	____	CHEST DISTINGUISHED FROM ABDOMINAL REGION
____	____	____	NAVEL OR STOMACH
____	____	____	CLOTHING, ANY ATTEMPT
____	____	____	CLOTHING, CLEAR REPRESENTATION
____	____	____	TOTAL CHECKS

found on other measures will have to be qualified. The presence of greater detail may allow for more signs of disturbance as well as more signs of sex-differentiation. The analysis also revealed a significant pictures effect ($F = 4.02$, $df = 2/372$, $p < .05$ but the pictures factor interacted with other variables. Significant Pictures X Number of Parents and Pictures X Care Group X Number of Parents interactions were obtained ($F = 4.39$, $df = 4/372$, $p < .05$ and $F = 2.79$, $df = 4/372$, $p < .05$, respectively). The three-way interaction is presented in Figure 3.

To determine the source of the interaction, a simple analysis of variance for care group was performed on the articulation scores of one- and two-parent subjects for each drawing separately. The only significant care group effect was found for one-parent subjects on the Self-drawing ($F = 3.21$, df 2/51, $p < .05$). The PC one-parent subjectsdrew less articulate self drawings than did one-parent GDC or FDC subjects. The latter two groups did not differ. Since the number of one-parent subjects for all three groups only totaled 54 when based on matched subjects, an analysis for care group and drawing effects was also performed including all of the white one-parent subjects tested (N = 78). A similar pattern of results was obtained with the larger sample, but the care group effect on the Self drawing was only marginally significant ($p < .06$). In summary, the results of the analyses of articulation scores indicated that (1) females drew more detailed pictures of people than did males, and (2) one-parent PC subjects drew somewhat less articulated drawings of Self than did

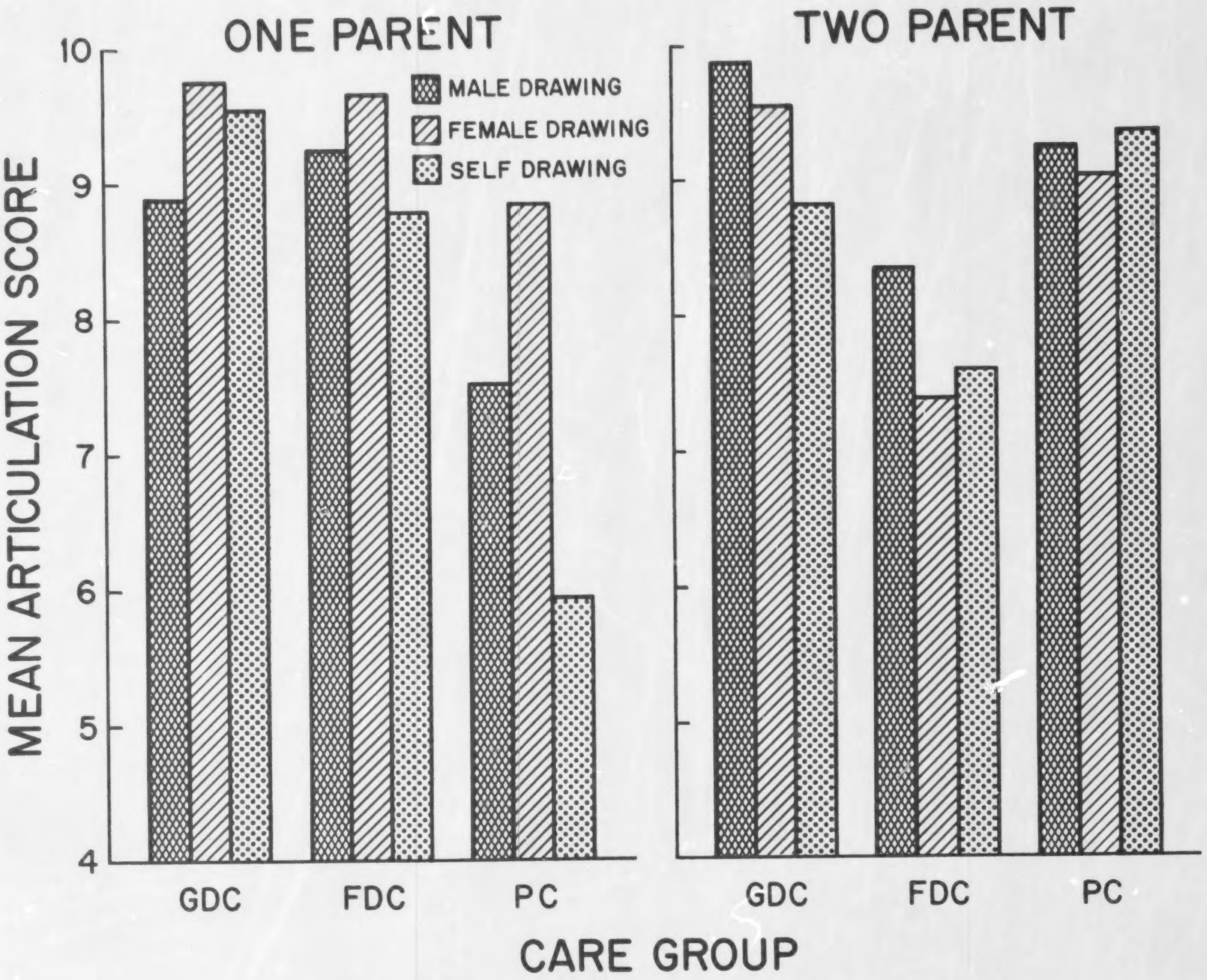

Figure 3. Mean DAP articulation score for one- and two-parent children as a function of care group and drawing.

one-parent day care children. The poorer articulation on the PC subjects' Self drawing cannot be interpreted as simply reflecting general inability to draw people since their Male and Female drawings were not significantly less articulate than those drawn by GDC and FDC subjects. The results suggest that the day-care experience may facilitate the development of body image to some degree for one-parent children.

Size of Drawing. Machover (1949) and Hammer (1958) have asserted that size of drawing is related to self-esteem and energy level. Research designed to relate size of drawing systematically to factors such as self-esteem, shyness, diagnosed disorder, father presence, mental age, and adjustment, have led to inconsistent findings. Swensen (1968) summarized the research as indicating that

> . . . size of the drawings does seem to reflect self-esteem, and probably fantasied self-inflation, but with an inconstancy that is a reflection of the relative lack of reliability of the size of the drawings (p. 30).

None of the studies summarized by Swensen apparently made comparisons between drawings by the same subject that were drawn in the same session. In the present study comparison of the relative size of Male, Female, and Self drawings was made. It was assumed that relative size would reflect the relative positiveness of the child's view of each. Specifically, it was expected that the exposure of center children to a female in the role of teacher would tend to result in larger female drawings by center than by FDC or PC children.

This prediction was based on the assumption that size of drawing is positively related to perceived authority and power. It was also expected that the Self drawings of GDC children would be drawn larger than those of FDC or PC children if the group experience tends to reduce shyness. Small drawings are typically interpreted as evidence of insecurity and shyness, while very large drawings are typically interpreted as evidence of aggression (Koppitz, 1968).

The height in centimeters of each drawing was measured. The mean height of each drawing is presented in Table 43 for each care group and sex. An analysis of variance for care group, sex, number of parents, and drawing was performed. No significant main effects or interactions were found. The expectation that GDC children might draw larger Self and Female drawings than FDC or PC children clearly was not confirmed. Even when absolute height was ignored and subjects were categorized on the basis of relative height of the male and female drawing, only 33% of the GDC children drew the female larger than the male in contrast to 35% of the FDC and 23% of the PC subjects. The relationship between care group and drawing the female larger was not significant ($\chi^2 = 2.51$, $\underline{df} = 2$, $\underline{p} > .10$).

There was also no relationship between care group and drawing the self figure largest of the three drawings ($\chi^2 < 1$), suggesting that the day care experience does not result in a more or less inflated perception of self-importance than does home rearing. The absence of a care group difference in size of self-drawings was consistent with the absence of significant care group effects on the Face Game.

TABLE 43

Mean height in centimeters of Male, Female, and Self drawing for each care group and sex

	Male			Female			
Drawing	GDC	FDC	PC	GDC	FDC	PC	Combined
Male	12.76	13.68	14.28	18.39	15.00	17.03	15.19
Female	13.89	14.54	13.60	17.84	13.66	15.01	14.76
Self	13.48	13.00	14.47	17.35	13.22	12.86	14.06
Combined	13.38	13.74	14.11	17.86	13.96	14.97	

Sex-detail. The three drawings were scored for the number of sex-appropriate features present in each drawing. Each indication of sex-appropriate accessories (neckties, purse, jewelry, etc.) clothing (trousers, skirt, dress, etc.), shoes (high heels), hair (short, styled, beard, etc.), or anatomy (penis, breasts, waist and hips, etc.) was given a score of 1. Scoring was very liberal with respect to the sophistication of the actual representation of the detail. The only stipulation was that the particular detail had to allow for differentiation of the male and female drawing. That is, a Male drawing was not credited with presence of short hair if the Female drawing also had short hair.

As was expected from previous research (e.g., Vroegh, 1970), the presence of sex-differentiating features was not typical of four year old children. Less than 25% of the children in our sample included even one sex-appropriate detail. Although marked sex differences were found in our other indices of sex-role orientation, subjects did not typically distinguish between the male and female drawing. Since it has been shown that sexual differentiation improves with age (Haworth & Normington, 1961) and that sexual differentiation is related to artistic ability (Sherman, 1958), it is probable that the paucity of sex-detail in the drawings of our four year olds cannot be interpreted entirely as reflecting lack of awareness of sex-appropriate physical characteristics.

The percentage of children in each care group and sex who included one or more sex characteristic is presented in Table 44.

TABLE 44

Percentage of subjects including at least one sex appropriate detail in Male, Female or Self drawing

	Males			Females		
Drawing	GDC	FDC	PC	GDC	FDC	PC
Male	21.21	15.15	15.15	33.33	21.21	18.18
Female	21.21	21.21	18.18	39.39	30.30	33.33
Self	24.24	9.09	9.09	30.30	30.30	33.33
All pictures	22.22	14.14	14.14	34.34	27.27	28.28

Keeping in mind that any relationship between care group or sex and presence of sex-detail may simply reflect differences in general maturity of drawing ability, the chi squares for the Self, Female, and Male drawings were partitioned to assess the relationship between care group, sex, and presence of sex-detail. No care group differences were found. However, for the Female and Self drawings a significant relationship was found between sex and presence of sex-detail ($ps < .05$). More girls than boys included sex-appropriate detail in their Self and Females drawings. Since girls were also found to have higher articulation scores than boys, the sex difference may simply be reflective of the greater articulation of the girls drawings. The more detail that is present, the more possible it is to include sex-detail. One might argue, however, that because girls only showed greater sex-detail on drawings of females (Female and Self drawing), that more girls than boys may be aware of same-sex characteristics. Again interpretation is difficult. We found that in making a list of sex-appropriate characteristics for scoring purposes that our list of feminine features was somewhat longer. There may be a larger number of accessory, hair, and clothing details distinctive to women that are easily representable even by an immature drawer. At the level of maturity of the drawings, it was not reasonable to interpret the absence of a feminine characteristic in the male drawing as indicative of sex-differentiation. We could only score positive instances.

Sex of First-drawn Figure. Machover and others have asserted that the first figure drawn by a subject, irrespective of claimed identity, is actually a representation of himself. Accordingly, it has been hypothesised that if a subject draws a figure of the opposite sex first, it is an indication of a strong orientation toward the opposite sex. After reviewing the literature testing the sexual identification hypothesis about sex of first drawing, Swensen (1968) concluded that sex of first-drawn figure is indeed related to self-concept, but that the relationship is more complex than originally believed.

Among those studies finding a positive relationship between sex of first drawing and other measures of self-concept was a study by Armstrong and Hauck(1961). They found that subjects who drew opposite sex first viewed themselves as similar to the opposite-sex parent on the dominance scale of the Interpersonal Check List. A study by McHugh (1966) found a relationship between neuroticism in children and a tendency to draw the opposite sex first. Whitaker (1961) and Grams and Rinder (1958), however, found that sex of first drawing failed to distinguish between homosexual and normal men and women. One could argue that adults, unlike children, are probably more aware of the socially acceptable response. The results of a recent study did find that 4-7 year old boys who had been identified as feminine on the basis of preferred dress, games, role, wish to be a girl, etc., drew the female figure first twice as frequently as did boys identified as masculine and about twice as often as found to be typical for 5-year old boys in other studies (Green, Fuller & Rutley, 1972). They found that on both the IT scale and on the DAP sex-of-first-drawing measure, feminine boys scored more similarly to the published norms for girls than those for boys.

On the basis of the studies using sex of first drawing as an index of sex role orientation with children, it was expected that any marked influences of care experience on sex orientation should be reflected in the proportion of subjects drawing the opposite sex figure first. The number of children drawing the opposite sex figure first is presented in Table 45. The percentage of children drawing the opposite sex figure first in the present study, about 25%, was very comparable to the results with 5-year olds summarized by Heinrich & Triebe (1972). They also found that about a quarter of both boys and girls drew the opposite sex first. Care experience was not found to significantly influence the proportion of children drawing the opposite sex first. The absence of care group effects on sex-role orientation as indexed by sex of first drawing, is consistent with the results of other indices of sex-role preference used in the project (toy preference, boy-girl preference, and occupation preference).

Boy-Girl Preference. Research comparing clinically identified feminine boys with a normal group has shown that a greater number of the feminine boys want to be moms when they grow up. After completing all the drawings, children in the present study were asked whether they would want to be the opposite-sex if they could. Most children were either horrified at the thought or thought the question was humorous. Only about 10% of the children admitted that they would want to be the

TABLE 45

Number of children in each care group and sex drawing a same-sex and drawing an opposite-sex figure first

Sex of First Drawing	Male GDC	Male FDC	Male PC	Female GDC	Female FDC	Female PC
Same-sex	27	27	24	26	21	25
Opposite sex	6	6	9	7	12	8

opposite sex. Girls were a little more likely to consider a switch. There was no relationship with care group. In conjunction with the results of the sex-of-first-drawing measure, the results of the boy-girl preference task suggest that maternal employment and the day care experience have not seriously influenced the proportion of children having an opposite-sex orientation.

Identity of Drawings. Most subjects (89%) drew all three of the requested pictures. Of the 198 matched triplets, only seven (6 males, 1 female) failed to draw even one picture. Overall, there were no sex or care group differences in the number of children failing to draw all three pictures. The first drawing was typically of the same sex as the child but was identified as someone other than self (only 18% were self). There was no relationship between the number of self-drawings and care group or sex. See Table 46 for the number of children in each care group and sex drawing themselves first.

The subjects were asked to identify whom each drawing represented immediately after completing it. The non-self drawings were categorized as parent, sibling, grandparent, caretaker, peer, other, unidentified, or no picture. The number of subjects in each care group and sex identifying the male and female as one of the above categories is presented in Table 47 for the Male drawing and in Table 48 for the Female drawing. Partitioning of the chi square revealed no significant relationship between care group, sex, and the number of identifications of the Male drawing as Father. Similarly, no relationship between care group, sex, and number of identifications of the Female drawing as Mother was found. Care

TABLE 46

Number of children in each care group drawing the Self figure first

Identity of First Drawing	Care Group		
	GDC	FDC	PC
Self	16	10	10
Not-Self	50	56	56

TABLE 47

Number of subjects identifying male drawing
as Father, Brother, etc.

Category	Care Group GDC n=66	FDC n=66	PC n=66	Sex Male n=99	Female n=99
Father	21	24	20	30	35
Brother	7	3	6	7	9
Grandfather	2	2	1	2	3
Caretaker	0	0	0	0	0
Experimenter	1	0	0	0	1
Peer	13	16	9	23	15
Unidentified	15	16	18	23	26
Other	5	2	7	7	7
No picture	2	3	4	7	3

TABLE 48

Number of subjects identifying female drawing
as Mother, Sister, etc.

Category	Care Group			Sex	
	GDC n=66	FDC n=66	PC n=66	Male n=99	Female n=99
Mother	19	14	20	31	22
Sister	6	6	6	9	9
Grandmother	1	1	1	1	2
Caretaker	0	2	0	1	1
Experimenter	9	6	4	8	11
Peer	14	17	14	17	28
Unidentified	12	11	12	22	13
Other	2	3	5	1	9
No picture	3	6	4	9	4

experience was also found to be unrelated to the tendency to identify either the Male or Female drawing as a peer. The absence of care group differences in the emphasis on peers is consistent with the results of analysis of the responses to the Who Stories discussed in the preceding section.

A few children (7.5%) drew the tester when asked to draw a picture of a person. Koppitz (1968) suggests that children who draw an adult with whom they are only slightly acquainted rather than an adult with whom they are more intimately involved, have failed to find satisfying relationships with those more familiar adults. If some children in day care have interpreted the daily separation from the mother as rejection, one might expect to find a greater proportion of day care children than home children orienting to the tester. Although a slightly higher proportion of GDC (15%) and FDC (9%) than PC (6%) children drew the tester, the difference was not significant.

Facial Expression. It was assumed that the facial expression drawn by subjects on each of the drawings would reflect the mood, happy or sad, typically associated with the individual being represented. Facial expression has been found to discriminate between normal and non-normal subjects (Hiller & Nesvig, 1965). More normal subjects draw a happy facial expression than do non-normals. Interpretation of a sad face as indicative of perceived unhappiness of another or of the child's own unhappiness in the case of the Self drawing was supported by the spontaneous comments offered by children while drawing. Nearly every child who drew a sad face provided supporting verbal comments as to the unhappiness of the individual being portrayed (e.g., "She's crying," "He's mad, " or " ... a sad mouth").

Facial expressions (based on mouth and presence/absence of tears) were categorized as Happy, Sad, Indeterminant, or No Expression (mouth and/or head absent). Only unambiguous representations of Sad and Happy faces were categorized as such. Typically a non-smiling face (but not necessarily sad) is categorized as sad, but because of the poor drawing skill of many of our subjects, we felt that it would be a more accurate reflection of the data to classify any ambiguous expressions separately. It was found that non-happy expressions (straight or wavy line) were sometimes accompanied by verbalizations indicating that the figure was smiling and sometimes accompanied by verbalizations indicating that the figure was sad.

The percentage of subjects in each care group and sex drawing faces categorized as Happy, Sad, Indeterminant, or No Expression, is presented in Table 49 for each drawing separately. It should be noted that very few children drew unambiguously sad faces and that over half of the subjects' drawings could not be categorized as either happy or sad (expressions absent or amibiguous).

A significant relationship between care group (collapsed over sex) and drawing a Happy expression was found on the Male drawing, with more GDC than FDC or PC children drawing a face with a happy expression ($x^2 = 8.00$, df = 2, $p < .01$). The results were in the same direction for the Female and Self drawings but the chi squares failed to reach significance.

TABLE 49

Percentage of subjects in each care group and sex drawing a Happy, Sad, Indeterminant, or No Facial Expression

	Males			Females		
	GDC	FDC	PC	GDC	FDC	PC
Male Drawing						
Happy	33.33	21.21	24.24	63.64	36.36	36.36
Sad	3.03	6.06	3.02	3.03	0	6.06
Indeterminant	42.42	36.36	33.33	24.24	42.42	42.42
No Face/Mouth	21.21	36.36	39.39	9.09	21.21	15.15
Female Drawing						
Happy	33.33	24.24	24.24	57.58	36.36	39.39
Sad	6.06	6.06	3.03	9.09	3.03	0
Indeterminant	36.36	24.24	21.21	24.24	27.27	33.33
No Face/Mouth	24.24	45.45	51.52	9.09	33.33	27.27
Self Drawing						
Happy	27.27	21.21	21.21	57.58	39.39	39.39
Sad	0	6.06	6.06	9.09	3.03	6.06
Indeterminant	39.39	36.36	24.24	21.21	36.36	36.36
No Face/Mouth	33.33	36.36	48.48	12.12	21.21	18.18

The interpretation of the care group effect on the Male drawing must be made in the context of a significant relationship on all drawings between care group and presence of an identifiable expression. More GDC subjects drew happy expressions but the effect was confounded by the fact that they also drew a greater number of identifiable expressions.

To clarify the relationship between care group and expression, a summary based only on children who drew identifiable expressions was made. As can be seen from Table 50, over 85% of the subjects who drew an identifiable expression drew a happy one. There was no relationship between care group and expression. The only conclusion possible is that GDC children were somewhat more advanced than FDC or PC children in the representation of facial detail (although the groups did not differ significantly in their overall articulation scores), but not necessarily "happier expression" drawers. In summary, there was no clear evidence based on facial expression that there is a higher proportion of unhappy children in day care than at home.

Emotional Disturbance. Swensen (1968) concluded from his review of human drawing literature that global measures of emotional disturbance correlate with several variables of clinical interest. This conclusion was based on the ability of several global measures to discriminate between populations known to differ in emotional stability by other criteria (e.g., Kahn & Jones, 1965; Koppitz, 1968; and Vane & Eisen, 1962) and on the finding that experimentally induced

TABLE 50

Percentage of children in each care group drawing happy expressions (based only on subjects who drew unambiguous expressions)

	Care Group		
Drawing	GDC	FDC	PC
Male	93.56	88.89	87.30
Female	86.04	86.16	94.45
Self	93.18	83.93	82.23
Combined	90.93	86.33	87.99

anxiety can influence measures of emotional disturbance (Silverstein, 1966). Among the emotional indicators in drawings that have been identified are: poor integration of parts of figure, slanting figure, transparency, large figure which overruns page, length of arms, absence of limbs, absence of facial features. Because of the young age of our subjects and the immaturity of their drawing skills, omissions of body parts, transparency, poor integration, and slanting figure were considered to not be appropriate indicators. A checklist was developed which included indicators which would be minimally related to maturation. We wanted to avoid the classification of large numbers of children as emotionally disturbed simply because they did not know how to hold a pen or had had little experience drawing. The checklist was as follows:

Emotional Indicator Checklist

___Tiny drawing (less than 2 inches)
___ Large, grandiose drawing which overruns the page
___ Extreme shading or scribbling over drawing
___ Gaping mouth
___ No facial features (but body, arms, etc., present)
___ Talon fingers
___ Dehumanized drawing
___ Bestial features
___ Body or head purposely misshapen (score only if accompanied by corroborating verbalization)
___ Refusal to attempt drawing

A score was assigned to each drawing on the basis of the number of checks received. No drawing received more than two checks and only 4.5% of the children in any one subgroup received two checks on any drawing. Most of the children's drawings contained no indication of emotional disturbance when the age of the children's drawing was taken into consideration.

The percentage of children in each care group and sex receiving one or more checks is presented in Table 51 for each drawing separately. Chi square analysis of the relationship between care group and presence of emotional indicator checks for each drawing revealed no significant relationships.

A tabulation was also made of the number of children in each care group using a combination of criteria for classification of drawings as indicative of emotional disturbance or not. Self drawings were classified as Healthy if the facial expression was happy and if the drawing received no emotional indicator checks. They were classified as Unhealthy if the facial expression was sad or absent and if the drawing had received one or more emotional indicator checks. The percentage of children in each care group whose Self drawing was classified as either Healthy or Unhealthy is presented in Table 52. No relationship was found between care group and categorization of Self drawing as assessed by chi square.

TABLE 51

Percentage of subjects with one or more checks on emotional-problem checklist

	Care Group			Sex	
Drawing	GDC	FDC	PC	Males	Females
Male	34.85	43.94	25.76	37.37	32.32
Female	34.85	48.48	34.85	42.42	36.36
Self	37.88	45.45	28.79	44.44	30.30
Combined	35.86	45.96	29.80	41.41	32.99

TABLE 52

Percentage of children in each care group classified as drawing healthy and unhealthy Self drawings

	Care Group		
Classification	GDC	FDC	PC
Healthy Self	33.33	25.76	27.27
Unhealthy Self	18.18	18.18	27.27

Summary.

The results suggested that girls and center children may be somewhat more mature human figure drawers than other children, but offered little evidence that day care had affected the normal course of development of sex-role orientation or body-concept. Certainly, there was no evidence that the proportion of children having an opposite-sex orientation was influenced by day care. The continued presence of mother apparently is not critical for a girls' showing a strong feminine orientation on figure drawings. The only indication that care experience may have influenced articulation of body concept was the finding that one-parent children in day care drew more articulate Self drawings than did one-parent children at home.

Measures dealing with emotional state also revealed no evidence that day care was associated with a greater number of emotional disturbance indices in drawings than home-rearing. The concern that maternal separation necessarily promoted insecurity and emotional disturbance received no support. Apparently the quality of the care provided in centers and day care homes is sufficient to overcome any distress reaction to separation that day care children may have had. When questioned about their attitude toward day care, few children indicated that they hated it. In fact, about a third said they would rather go to their day care setting than stay at home.

CHAPTER 10

SEX-ROLE

Children have been observed to take on the behaviors and to value particular behavior patterns appropriate for their sex at an early age. Although some sex differences have been noted in children during the first year of life (e.g., activity level and vocalization), most evidence indicates that socialization and cognitive processes are the major contributors to the child's adoption of sex-typed behavior (cf., Mischel, 1971). Awareness of sex differences and the behavioral implications has been noted as early as children can be tested reliably. Vener and Snyder (1966) found that two-and-a-half-year olds show clear sex-related preferences for objects. The two, and certainly the three and four year old, can correctly label himself as a boy or girl (Brown, 1956; Kohlberg, 1966). There is considerable inconsistency or lack of constancy of sex identity, however, even in five and six year olds. Identification of sex of dolls and of themselves has been shown to be made primarily on the basis of clothing and hair length (Conn & Kanner, 1947; Katcher, 1955; Kohlberg, 1966). Kohlberg found that not until 6-7 years were most children certain that they could not change sex simply by changing clothes and hairstyle to fit the appropriate sex. Certainly the preschool years are an important, perhaps critical, period in the child's acquisition of sex-appropriate values, interests, and behaviors.

There are several hypotheses concerning the course of development of sex-appropriate behaviors. Generally sex-typing is considered to be a major product of the process of identification (cf., Bronfenbrenner, 1960; Kagan, 1958). There are, however, several theories concerning the motive for the process--status envy, social power, and secondary reinforcement (Bandura & Walters, 1963; Freud, 1933; Whiting, 1960). Research has shown that a child will imitate or adopt the behaviors of a model who is the recipient of desired resources, who is the controller of desired resources (child not recipient), and who is the dispenser of desired resources (child recipient) (Bandura & Huston, 1961; Bandura, Ross & Ross, 1963; Mussen & Distler, 1960; Mussen & Parker, 1965; Mussen & Rutherford, 1963; Sears, Maccoby & Levin, 1957).

In addition to the above factors, perceived-similarity of the child to the same-sex parent has been shown to be an important determinant of the child's taking on of sex-appropriate behaviors (Hetherington & Frankie, 1967; Maccoby & Wilson, 1957). Perhaps the clearest demonstration of the role of the same-sex parent in the child's adoption of sex-appropriate orientation is found in research on the effects of father-absence. Unless the mother undertakes a concerted effort to reinforce masculine behavior and preferences in her male children, or there are older male siblings, father-absence has been found to result in significantly less masculine behavior and interests (Biller, 1971; Hetherington, 1965; Santrock, 1970; Sigel, Star, Secrist, Jackson & Hill, 1971).

Because sex-role adoption and preference is dependent upon the behaviors and values modeled for the child, the relationship of the child to the model, and the sex of both child and model, any modification of the typical family arrangement would be expected to affect the child's acquisition of sex-role behaviors and preferences. Certainly the working mother provides a somewhat different model of female-appropriate behavior to the girl than does the non-working mother, although the working aspect of the mother's role is less visible to the child than her in-family role. The father may also provide a somewhat different model of male-appropriate behavior. When the mother works, or goes to school, often the role of the father in the home changes to some extent. Father is more likely to be called upon to do the dishes, clean up a mess, help with the laundry, bathe children, etc., if the woman is absent from the home 8-10 hours a day. Employment of the mother might, then, be expected to provide a somewhat less differentiated sex-role model for both the boy and girl.

Another factor which may affect the child's sex-role adoption and preference is exposure to a peer group. Often peers (as do older siblings) can be observed to exert more pressure toward role conformity than parents would. Being called "sissy" a few times by other children may rather quickly reduce a boy's expression of interest in dolls or dress up.

The influence of day care on sex-role preference and adoption is difficult to predict because of the number of factors which come into play when a child is in day care. Maternal employment, teacher behavior, and intensive peer exposure are all likely to influence sex-role preference. On one hand, the girl may be exposed to a less stereotyped portrayal of the female role when the mother works, but day care center experience may dilute the potential influence of the less stereotyped female role observed in the home. Fagot and Patterson (1969) found that nursery school teachers consistently reinforced feminine behaviors more than masculine behaviors in both boys and girls. For girls, peer exposure in a day care setting would be expected to promote the acquisition of stereotyped sex-appropriate behavior. That expectation was confirmed by Fagot and Patterson. They found that peers reinforced same-sex peers for same-sex behaviors. Peer reinforcement of sex-inappropriate behavior was found to be almost nonexistent. The peer and teacher reinforcement of feminine behavior may tend to overpower the potential impact of a girl's exposure to a mother in the working or student role.

Prediction of the influence of day care on the sex-role adoption of the boy is as difficult as for the girl. The boy may be exposed to a less stereotyped portrayal of the masculine role when the mother works. The teachers' tendency to reinforce feminine-type behaviors in boys as well as girls (Fagot & Patterson) may serve to corroborate the evidence for the feminized male role presented in the home. Peer reinforcement of masculine behaviors, however, may override the parent and teacher influence so that masculine behaviors are maintained. At a time in children's lives where they are attempting to establish sex-identity and role, peer attitude and behavior may be especially convincing to a child that only stereotyped sex-role behaviors are appropriate. The modifications in parent roles that often take place when the mother works, may be more likely to exert an influence at a later point when the child can appreciate that not all mothers work and not all fathers help with the dishes and child-care. Also, considerable traditional sex-role diversity is displayed by both working parents, despite the documented shift toward a more equalitarian approach to domestic chores (cf., Hoffman, 1974).

Toy Preference

Toy and activity preferences have been shown in numerous studies to reflect sex-role standards for appropriate behavior (e.g., Biller, 1968; Rosenberg & Sutton-Smith, 1964). To assess the influence of day care on toy preference, two measures were employed. The first was based on children's choices of preferred toys. The second was based on actual toy and activity preferences observed by caretakers.

Method

Task. The materials consisted of 15 color pictures of toys clipped from catalogs and encased in plastic. The pictures were all approximately the same in size, degree of detail, and general attractiveness. Five toys were masculine (airplane, fire engine, tool set, train, and football); five were feminine (purse, doll, sewing machine, dishes, and doll house); and five were neutral (record player, guitar, camera, lincoln logs, and alphabet board). Five adults independently sorted the pictures into the three categories. There was 100% agreement on category membership. Several of the subjects spontaneously sorted the pictures into piles at the end of the task and were in agreement with the adult categorizations. A neutral category was included to help avoid the overestimation of sex-typing which might occur with a forced choice between masculine and feminine toys (cf., Laosa & Brophy, 1972).

The experimenter told the subject that she had some pictures of toys she would like to show him. Three pictures were presented at a time, one from each category. The subject was instructed to indicate which of the three toys in front of him he would most like to play with if he could right then. Five sets of triads were presented.

This procedure was repeated three times. The same pictures were used on each of the three trials, but each toy appeared with different alternatives on each of the trials. The administration of more than one trial deviates from the typical procedure. It was reasoned that the use of three exposures rather than just one might distinguish between the extremely sex-typed child and the child who is aware of the sex-appropriate response but is interested in a variety of toys, some masculine, some neutral, and some feminine. The latter child might give stereotyped choices on the first trial but show his wider interests on subsequent trials. The extremely sex-typed child would be expected to continue selecting only stereotyped sex-appropriate toys across trials.

Scoring. Two scoring procedures were used. The first described is the typical scoring mode used when a forced choice procedure is used but has limitations when a neutral choice is possible. The second scoring procedure more clearly reflects data based on a free choice procedure.

1. Masculinity of choice. A score for each trial was obtained by using a point system. A masculine choice was assigned 2 points, a neutral choice 1 point, and a feminine choice 0 points. A maximum score of 10 was possible for each trial. A high score indicated strong masculine toy preference.
2. Number of Masculine, Neutral, and Feminine choices on each trial (range 0-5 for each category of choice on each trial).

Results

Masculinity Score. Mean masculinity of toy preference for each care group and sex is presented in Figure 4 separately for one and two parent subjects. Number of parents was included as a factor in several of the analysis of sex-typing measures to assess for possible interaction with day care experience. The 3 X 2 X 2 X 3 analysis of variance

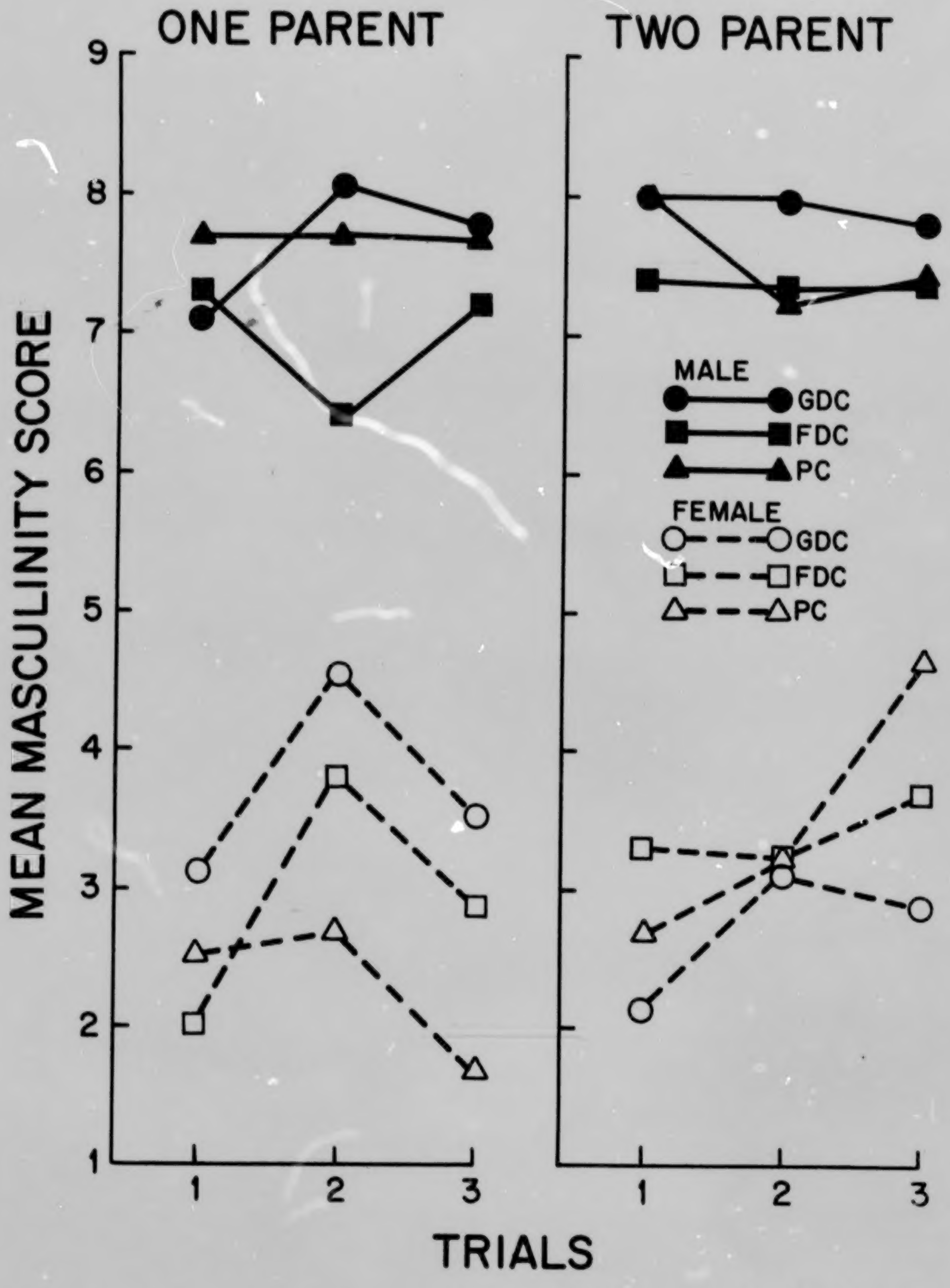

Figure 4. Mean masculinity of toy preference as a function of care group, sex, number of parents, and trial.

for care group, sex, number of parents, and trials revealed a significant sex main effect ($\underline{F}$ = 217.79, $\underline{df}$ = 1/186, $\underline{p} < .001$). The Sex X Trials and Sex X Number of Parents X Trials interactions also reached significance ($\underline{F}$ = 3.84, $\underline{df}$ = 2/372, $\underline{p} < .05$ and $\underline{F}$ = 3.03, $\underline{df}$ = 2/373, $\underline{p} < .05$, respectively). The Group X Sex X Number of Parents X Trials interaction was marginally significant ($\underline{F}$ = 2.05, $\underline{df}$ = 4/372, $\underline{p} < .10$). No other effects reached significance. Breakdown analyses of variance for number of parents and trials for each sex separately revealed no significant effects for males ($\underline{F}$s < 1). A significant trials main effect and Number of Parents X Trials interaction was found for females ($\underline{F}$ = 7.97, $\underline{df}$ = 2/194, $\underline{p} < .001$ and $\underline{F}$ = 4.49, $\underline{df}$ = 2/194, $\underline{p} < .01$, respectively). Further planned analyses of variance for number of parents on each trial separately (females only) revealed a significant number of parents main effect on Trial 3 only ($\underline{F}$ = 4.03, $\underline{df}$ = 1/97, $\underline{p} < .05$). On the third choice of preferred toys one-parent girls had a lower masculinity score than two-parent girls. Results based on the alternate scoring procedure more clearly reflected the actual preferences on the subjects.

Number of Masculine, Feminine and Neutral Choices. The mean number of masculine and feminine choices made on each trial by each care group, sex, and number-of-parent subgroup, is presented in Figures 5 and 6 separately for children from one and two parent families. A separate 3 X 2 X 2 X 3 analysis of variance to assess the effects of care group, sex, number of parents, and trials was performed for each of the three types of toy choices (masculine, neutral, feminine). The analysis of the number of masculine toy choices revealed a significant sex effect as would be expected ($\underline{F}$ = 167.69, $\underline{df}$ = 1/186, $\underline{p} < .001$). No other effects

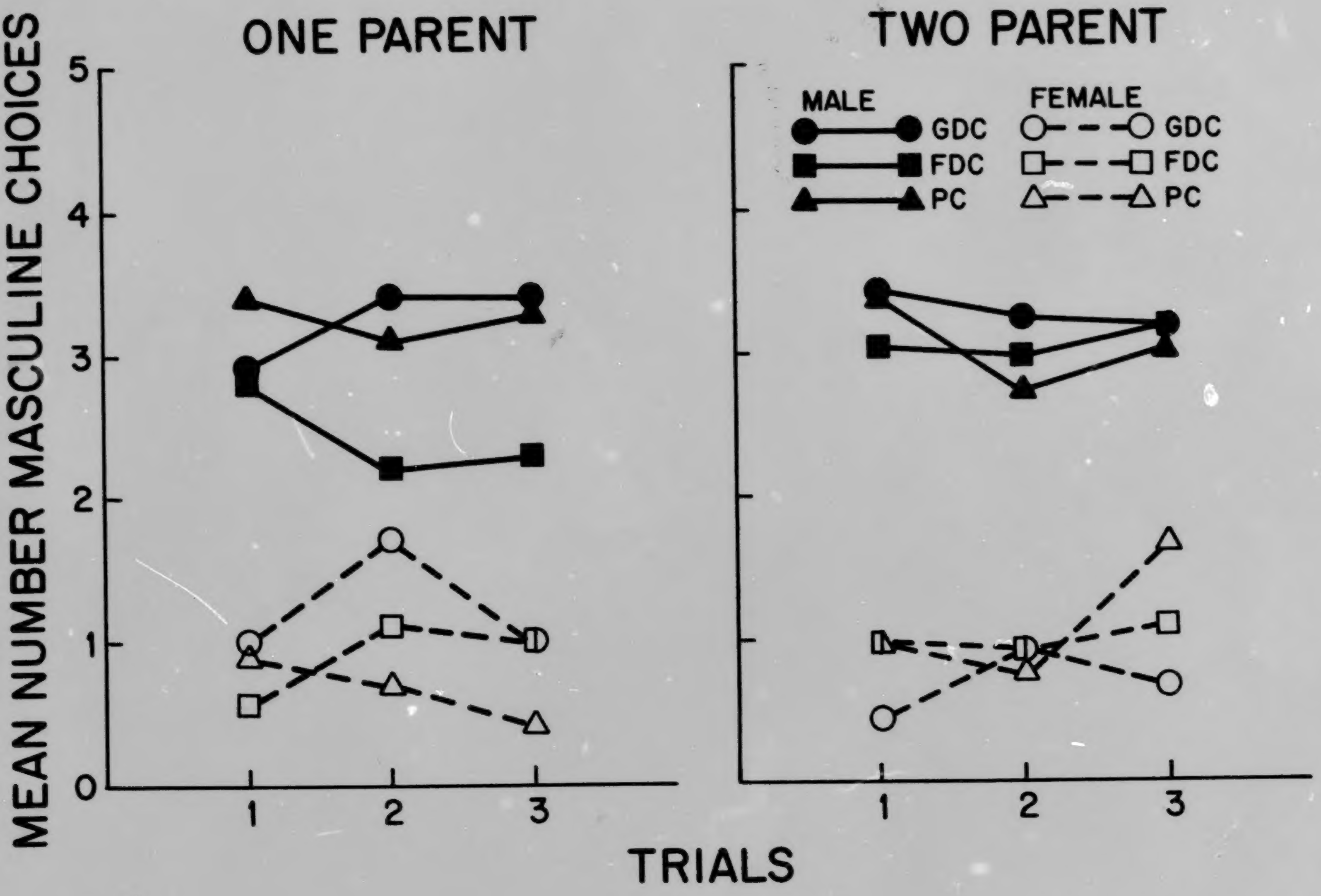

Figure 5. Mean number of masculine toy choices as a function of care group, sex, number of parents, and trial.

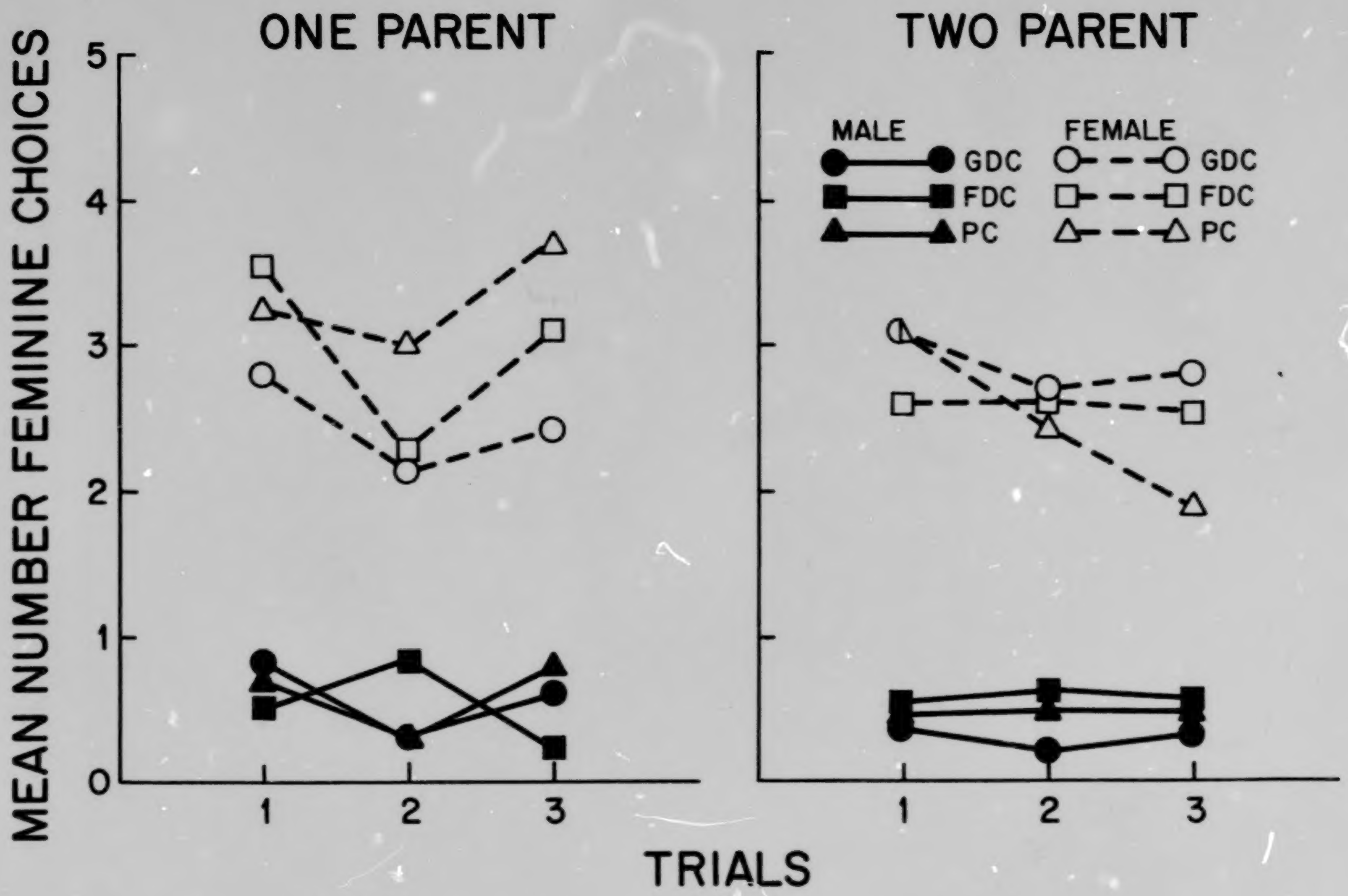

Figure 6. Mean number of feminine toy choices as a function of care group, sex, number of parents, and trial.

reached significance although the Care Group X Trials and the Sex X Trials interactions approached significance (ps $< .10$).

Analysis of the number of neutral choices revealed only a significant trials effect ($F = 4.86$, $df = 2/372$, $p < .01$). The sex effect was only marginally significant ($p < .10$) with males tending to make more neutral choices than females. Both males and females made more neutral choices on Trial 2 than on Trials 1 or 3.

Analysis of the number of feminine choices revealed significant sex and trials main effects ($F = 213.64$, $df = 1/186$, $p < .001$ and $F = 6.17$, $df = 2/272$, $p < .01$) respectively. Significant Sex X Trials and Group X Number of Parents X Sex X Trials interactions were also found ($F = 3.20$, $df = 2/372$, $p < .05$ and $F = 2.42$, $df = 4/372$, $p < .05$). Inspection of the means suggested that the interaction reflected a difference in the number of feminine choices made by one- and two-parent PC females (see Figure 6). One-parent PC females tended to pick a greater number of feminine toys over trials while two-parent PC females decreased in the number of feminine choices over trials. Males in all groups were uniformly low in the number of feminine toy choices on all trials.

A tabulation of the number of subjects in each group giving no opposite-sex choices over the three trials was made to allow for assessment of the relationship of care mode and degree sex-typing (extreme versus not extreme). The number of subjects in each group giving no opposite-sex responses is presented separately for males and females in Table 53. Males were less likely to select even one feminine toy than girls were to select a masculine toy, suggesting that males, even at four years of age, were more stereotyped in sex-role than females. Interestingly, PC females were the least stereotyped of all subjects. Only 9% failed to

TABLE 53

Number of children in each care group and sex selecting no opposite-sex toys

Number of opposite-sex choices	Males			Females		
	GDC	FDC	PC	GDC	FDC	PC
No opposite-sex	11	14	13	8	6	3
One or more opposite-sex	22	19	20	25	27	30

choose at least one masculine toy, while nearly a quarter of the GDC females chose only feminine and/or neutral toys.

In summary, the toy preference data revealed care group differences in degree of sex stereotyping among girls but no differences among boys. Contrary to what one might expect, the fewest strongly sex-typed girls with respect to toy preference were found in the home-reared group, particularly among those with two parents. Apparently being "at home with mother" does not lead to greater feminization of boys or girls than does separation and day care experience.

Sex-role Adoption

Method

Task. Since the presentation of pictures of toys represents a somewhat artificial situation in which to observe a child's sex-role preference, the caretakers were asked to provide a list of each child's five favorite toys and activities. Because the two day care situations and the homes did not provide identical choices for the children, the reader must be cautioned in his interpretation of the results based on caretaker listings. Despite the artificiality of the picture preference task, it did provide for uniformity of stimuli for the subjects in the three groups. It at least told us how three groups of children responded to identical toy pictures.

Scoring. Each toy or activity was categorized by two independent judges as belonging to one of three categories: predominately a toy for boys, for girls, or for both boys and girls. Each category was assigned a score, 3, 1, and 2, respectively. A mean masculinity of toys score was derived for each child.

Results

The mean masculinity of toys for each care group and sex is presented in Table 54. Analysis of variance for care group and sex revealed a significant sex main effect and a Care Group X Sex interaction ($F = 262.13$, $df = 1/234$, $p < .001$ and $F = 3.68$, $df = 2/234$, $p < .03$, respectively). Separate one-way analyses of variance for males and females revealed that care group was a significant factor for males only ($F = 4.86$, $df = 2/123$, $p < .01$). Among the males, PC boys were most sex-typed and GDC boys least stereotyped in the activities and toys listed by the caretakers as preferred.

Inspection of the actual toys and activities listed by teachers, day care mothers, and mothers indicated that certain categories of toys were specific to a care group. Mothers rarely mentioned that their boy enjoyed arts and crafts, table games, or other quiet activities, while those same activities often headed the lists of preferred activities made by center teachers. Likewise, big trucks, two-wheel bikes, and other large-motor toys were infrequently mentioned by teachers. The obtained care group difference may be a more accurate reflection of the selection of activities available to children in centers and condoned by teachers than of the boys' preferences. This interpretation of the results of ratings based on caretaker listing seems more plausible in light of the absence of a care group difference among males in self-expressed toy preference. It is also consistent with the observations of Fagot and Patterson (1969) that teachers reinforce feminine activity choices for boys as well as girls.

It should be noted that if, in fact, different types of toys and

TABLE 54

Mean masculinity rating of caretaker listed toy and activity preferences for each care group and sex

Sex	Care Group		
	GDC	FDC	PC
Male	3.31	3.42	3.59
Female	2.54	2.63	2.55

activities are available to the center and home child, naturalistic observation and rating of the subjects' play behavior would have led to the same difficulty in interpretation as the caretaker listings. Even observation in a controlled setting which provided an identical array of toys for all children would not have yielded totally unambiguous data. Assuming center and home children are exposed to different toys on a daily basis, they may tend to react to the novelty of the less familiar toys in a test situation and select in part on the basis of novelty rather than sex-appropriateness. In a test situation with a non-punitive female, even strongly sex-typed boys might venture to play with an interesting feminine toy such as a battery-operated lamp or an "electric" mixer. That same limitation may apply to interpretation of the picture preference task also.

Occupational Preferences

By three or four years of age most children will respond to a question about what they want to be when grown up with a ready response. Some children mention an occupation, often nurse, doctor, teacher, or fireman, but many others express a desire to be a parent or older sibling as their aspiration for the future. Since sex differences are typically found, one would conclude that children have learned something about appropriate adult sex-roles even before entering school.

It was expected in the present study that day care children, particularly girls, would give more occupational choices in response to a question about growing up than would PC children. Center children are exposed to a number of employed women (and occasionally men) in the role of teacher and also have a working mother in most instances. It was also assumed that children in day care were more likely than home children to have been systematically exposed to a variety of occupational possibilities through stories, lessons, and field trips.

Method

Task. No visual materials were used. The subject was engaged in conversation with the experimenter and asked the following sequence of questions:

1. a. Someday, you will be all grown up. You'll be a big person. What would you like to be when you grow up?

   b. What does a (child's first response) do?

2. a. What else do you think you might like to be when you grow up? What else could you do?

   b. What does a (child's second response) do?

3. a. What else do you think you might like to be?

   b. What does a (child's third response) do?

4. a. When you grow up do you think you would like to be a mommy or would you want to be a daddy?

   b. What does a mommy/daddy do?

5. a. When you're a mommy/daddy, do you think you'll work and have a job, or do you think you'll stay home all day?

   b. If you had to have a job and work, what would you do?

If the subject failed to give any occupational choices in response to the first three questions, he was told that the experimenter knew some things that people sometimes were when they grew up. She told them to the child and asked if they made him think of anything he would like to be. The list included: sell things in a store, bus driver, cook in restaurant, teacher, fireman, nurse, doctor, secretary and have a typewriter, make things in a factory, policeman, librarian and work with books, and telephone operator.

Scoring. The following measures were obtained:

1. Number of specific occupational choices in response to questions 1, 2 and 3.

2. Rated masculinity of occupational choice. First occupational choice in response to question 1, 2 and 3 was rated. A masculine choice was given a score of 3, a neutral choice a score of 2, and a feminine choice a score of 1. Categorization of the occupations was done in the following manner: A list of all the occupations mentioned one or more times by the subjects was made. Categorizations were made by four adults, two male and two female. Two of the raters were parents, one a child psychologist, and one a family day care mother. The mode across raters on a particular occupation was used to determine category membership. The occupations by category were:

Masculine	Feminine	Neutral
ambulance person	baby sitter	bank teller
astronaut	ballerina	cook
barber	baton twirler	entertainer
baseball player	cheerleader	ice skater
basketball player	experimenter	store person
builder	library person	swimmer
bus driver	nurse	teacher
car wash person	secretary	work onions
dentist	waitress	
doctor		
elephant trainer		
farmer		
fire fighter		
football player		
garbage collector		
house painter		
lion tamer		
mail delivery person		
make rockets		
milk delivery		
phone fixer		
pilot		
pirate		
police		
road fixer		
tow truck driver		
train person		
veterinarian		
wood cutter		
work with tools		
zoo keeper		

3. Rated masculinity of occupational choice. Based on first occupational choice given whether in response to the questions or a choice from the list. The same rating system was used as for the preceding measure.

4. Category of choice for each of the three trials. Not all of the subjects' answers to the three questions about what they wanted to be when they grew up were occupations. Each of the subject's three choices (1,2,3) was coded into one of the following categories:

   a. specific occupation
   b. adult (non-parent)
   c. parent
   d. older child
   e. same age child
   f. fantasy
   g. non-human (animal)
   h. don't know

Results

When Grown Up. The percentage of subjects in each care group and sex selecting to be each of the eight "grown up" categories is presented in Table 55 for each of the three choices separately. The three most frequently used categories were specific occupation, parent, and don't know. Among boys a specific occupation was given by about half of the subjects on all three trials. For females, only about a third of the subjects gave a specific occupation as a first choice, and by the third choice less than 20% gave an occupational choice. By the third choice many girls had run out of possibilities. About 40% failed to come up with anything better than "I don't know". As might be expected, wanting to be a parent when grown up was a considerably more frequent choice among girls than boys. On the first choice nearly a quarter of the girls expressed a wish to be a mom but only 8% of the boys said they wanted to be a dad when grown up.

As would be expected from inspection of the tables, partitioning of chi square to assess the relationship between care group, sex, and

TABLE 55

Percentage of subjects in each care group and sex
giving each of 8 choices of what to be when grown up

Choice Category	Males GDC	Males FDC	Males PC	Females GDC	Females FDC	Females PC
Trial 1						
All adult						
Spec. Occ.	39.4	66.7	60.6	31.3	42.4	30.3
Adult	9.1	6.1	6.1	9.4	12.1	12.1
Parent	15.2	3.0	6.1	34.4	18.2	27.3
Older Child	9.1	6.1	0.0	3.1	24.2	12.1
Same Child	3.0	6.1	6.1	3.1	3.0	6.1
Fantasy	6.1	3.0	6.1	3.1	0.0	3.0
Non-Human	9.1	0.0	12.1	12.5	0.0	3.0
Don't Know	9.1	9.1	3.0	3.1	0.0	6.1
Trial 2						
All adult						
Spec. Occ.	48.5	60.6	63.6	21.9	24.2	27.3
Adult	6.1	0.0	9.1	9.4	9.1	12.1
Parent	6.1	3.0	3.0	18.8	27.3	9.1
Older Child	3.0	3.0	0.0	9.4	15.2	9.1
Same Child	0.0	0.0	6.1	3.1	6.1	3.0
Fantasy	9.1	3.0	6.1	6.3	0.0	6.1
Non-Human	12.1	6.1	6.1	15.6	0.0	12.1
Don't Know	15.2	24.2	6.1	15.6	18.2	21.2
Trial 3						
All adult						
Spec. Occ.	45.5	42.4	51.5	9.4	24.2	18.2
Adult	0.0	6.1	6.1	6.3	3.0	3.0
Parent	0.0	0.0	3.0	15.6	9.1	12.1
Older Child	6.1	6.1	0.0	6.3	18.2	3.0
Same Child	0.0	0.0	3.0	6.3	0.0	3.0
Fantasy	6.1	3.0	6.1	0.0	0.0	9.1
Non-Human	9.1	3.0	9.1	9.4	3.0	15.2
Don't Know	33.1	39.4	21.2	46.9	42.4	36.4

giving an occupational choice revealed only a significant sex effect ($\underline{p} < .05$ on each choice). No care group effect was obtained, although it is interesting to note that among boys a marginally significant relationship between care group and giving an occupational first choice was found ($X^2 = 5.48$, $\underline{df} = 2$, $\underline{p} < .10$). Somewhat fewer GDC (39%) boys than FDC (66%) or PC (60%) gave a specific occupation as the first choice.

The first occupational response (if any) given by subjects was rated on masculinity-femininity to determine if care experience influenced the degree of sex-stereotyping of selected occupation. Occupational choices were categorized as masculine, feminine, or neutral. The percentage of subjects giving a masculine versus feminine or neutral choice is presented in Table 56. No relationship between care group and masculinity-femininity of occupational choice was found ($X^2 = 3.19$, $\underline{df} = 2$, $\underline{p} > .10$). Sex, as would be expected, was related to the masculinity-femininity of the occupational choice ($X^2 = 74.77$, $\underline{df} = 1$, $\underline{p} < .01$). In general, the data gave no indication that a girl's having a working mother influenced her projected adult role. The GDC and FDC girls were no more likely to give an occupational choice than were home-reared girls.

It has been suggested that females show a foreclosure of occupational possibilities at a very early age (Looft, 1971). The fact that twice as many males (over 50%) as females (23%) came up with as many as two occupations confirms that suggestion. Even using much more liberal interpretations of occupations than used by Looft, males were found to use a total of 35 different categories in making their first

TABLE 56

Percentage (of those who gave an occupational choice) of children in each care group and sex giving a masculine and giving a feminine or neutral occupational choice as a first response

Categorization	Male			Female		
	GDC	FDC	PC	GDC	FDC	PC
Masculine	81.82	94.12	96.30	18.18	31.03	23.81
Feminine or Neutral	18.18	5.88	3.70	81.82	68.97	76.19

occupational choice while females only used 24. Several categories (14) were selected by males and females (at least once choice by each sex was found). These overlapping occupations were doctor, fireman, nurse, pilot, police, storeperson, teacher, librarian, store santa claus, cook, house painter, and someone who works with tools. It was interesting that only one male ventured to select nursing while 13 females (and only 10 males) selected doctor as something they would like to be when they grow up.

It has been expected that the potentially broader exposure to adults other than the parents might result in a more varied spectrum of known possible occupational choices for GDC children. The expectation was not confirmed. The number of different categories used by each care group was found to be 26 for GDC, 25 for FDC, and 23 for PC. There was also no difference in the number of categories mentioned exclusively by one care group. The GDC children named 7 categories not mentioned by FDC or PC children. The FDC and PC children mentioned 9 and 7 respectively.

After giving three choices of what they wanted to be when grown up, subjects were asked whether they would rather be a mom or be a dad when they grew up. The percentage of children wanting to be moms or dads is presented for each sex and care group in Table 57. There was no significant care group differences in the proportion of children wanting to be moms or wanting to be dads. There was, of course, a difference associated with sex. Most girls wanted to be moms (83.47%) and most boys wanted to be dads (79.13%). Only 9.56% of the boys wanted to be moms and only 7.44% of the girls wanted to be dads. A few children wanted to be neither. One might expect that more one-parent

TABLE 57

Percentage of children in each care group who wanted to be a mother or a father when grown up

Parent Choice	Male			Female		
	GDC	FDC	PC	GDC	FDC	PC
Mother	10.81	9.30	8.57	85.37	76.92	87.80
Father	81.08	79.07	77.14	7.32	15.38	0.0

Note. - Columns do not add to 100% because a few children wanted to be neither a mother nor a father.

than two-parent boys would choose to be a mom but there was little difference in the percentage of children choosing mom (11.90% for one-parent boys and 8.22% for two-parent boys).

Subjects were also asked what they would do if they were a mom/dad and "had a job". The responses given in answer to that question were compared with the occupational choices given in response to the question about what they wanted to be "when grown up". Among those children who gave an occupation in response to both questions, it was found that 42.45% gave a different occupation in response to the two questions. The choice given in answer to, "What do you want to be when grown up", was likely to be a stereotyped four-year-old choice, while the choice given in response to, "What job would you do when a parent", was often one parent's actual occupation. The discrepancy in responses to the two questions suggests that for some four year olds, the question, "What would you like to be when you grow up", may not elicit responses having to do with vocational aspirations as has been assumed by some researchers (e.g. Kirchner & Vondracek, 1973). The response to the job question may be more reality oriented. This suggestion is consistent with results reported by Looft (1971) with first and second grade children. Subjects gave different responses to a question about what they would like to be when grown up and about what they really thought they would do when grown up. About the same percentage of children in each care group gave discrepant choices to the two questions (GDC, 54.55%; FDC, 63.64%; and PC, 55.56%).

In summary, the results suggest that by four years of age considerable vocational orientation has taken place. Some children were quite confident that they would be professionals when they grow up or be involved in an adventurous occupation such as police work. Others reacted as if they had no idea what was being asked when the question of what they would want to be when grown up was posed. Many children could not think beyond the possibility of being five years old and going to school. The strong sex difference found in the percentage of children giving occupations and in the number given supports the contention that a future orientation which includes or does not include an occupation has been formed during the preschool years for many children. Even having a working mother apparently failed to alter the day care girls' perception of either the availability of options or the appropriateness of an occupation to the female. A few girls expressed awareness of the limitations of choices traditionally open to women. After giving one occupational choice and one mother choice, they sighed, "Well, I guess that's about all girls can be." Their third choice was, "I don't know what else I could be".

If both having a working mother and attending a center with an educational component have failed to have an impact on a child's motivation and interest in moving on into the adult working world, we need to be seriously concerned about vocational education during the preschool years. Equality of opportunity will not be achieved if only white middle class males become oriented toward the adult occupational world. We found, as did Kirchner and Vondracek (1973), that the black children in our sample and the females of both races were considerably less occupationally oriented than the white male. Even if the "occupations" are idealizations from story books and television, they do at least give the child a basis for imagining what it would be like to be in an adult role. Perhaps as children's literature and television programming become less race- and sex-biased, one aspect of allowing for early vocational orientation for all children will have been accomplished.

CHAPTER 11

ACHIEVEMENT MOTIVATION

Considerable research has addressed itself to the understanding of the antecedent and behavioral correlates of achievement in children. (See review by Smith, 1969, and Weiner, 1972.) This research has primarily focused on the elementary school age child and adolescents. The research of both McClelland and Atkinson have emphasized the role of a desire or need to achieve in maintaining or increasing the achievment behavior of individuals and even of nations. Although it is presumed that achievement motivation is rooted in early childhood, there has been little research with preschool children exploring why and when children become concerned with how well they do (cf., Crandall, 1964).

Studies which have employed preschool subjects have found that there are clear individual differences in the frequency and persistence with which the children attempt demanding tasks (e.g., Crandall, Preston & Rabson, 1960). One study has found that children even as young as first grade show clear differences in their achievement striving depending on the activity (Crandall, 1961). Crandall (1970) has reported that with adults achievement behavior in different areas--intellectual, academic or physical--each has a distinctive pattern of parental and child behavioral antecedents and correlates, suggesting that global statements about achievement motivation based on a single type of task should be avoided. Achievement motivation may vary not only from child to child but from one achievement area to another.

The present study focused on two types of achievement behavior--academic and physical. Each child's interest in achievement oriented academic and physical activities was assessed through a toy preference task using a forced-choice procedure. Level of aspiration and expectation of success on a physical activity was studied by playing a bean bag game. The same variables were taped on an academic task by playing a memory game.

Toy Preference Task

Observation of children's free play behavior has indicated that most children show a greater concentration of interest and effort in some areas of achievement than in others. Crandall, for example, has reported finding low or negative correlations between intellectual and physical achievement. The toy preference task was designed to determine whether care experience was associated with achievement orientation in a particular area.

Method

Task. Materials were eight color pictures of toys and games clipped from catalogs. Each picture was affixed to a four by six inch card and encased in plastic. Two pictures represented each of the following four categories of toys: Physical Achievement (two-wheel bike, ring toss game); Non-Physical Achievement (Child Guidance teaching clock, Fischer-Price school desk); Physical Non-Achievement (tricycle, slide and swing); and Non-Physical Non-Achievement (view-master, Noah's Ark). Five adults independently sorted the pictures into the four categories. Agreement was 100%.

Twenty-eight paired comparisons were presented to each subject. The experimenter named each toy, and described its function as it was presented. The child indicated preference by pointing to one member of each pair.

Scoring. The following measure was obtained:

1. The number of choices by each subject in each category was summed, giving each subject four scores.
    a. number of physical-achievement choices
    b. number of nonphysical-achievement choices
    c. number of physical-nonachievement choices
    d. number of nonphysical-nonachievement choices.

Results

A four-way analysis of variance for care mode, sex, achievement and physicalness was performed. Achievement orientation of the toys and physicalness were found to be significant main effects (F = 4.91, df = 1/192, $p < .03$ and F = 98.17, df = 1/192, $p < .001$, respectively). An Achievement X Physicalness, Achievement X Physicalness X Group, and an Achievement X Physicalness X Sex interaction were also found (F = 18.80, df = 1/192, $p < .001$, F = 4.55, df = 2/192, $p < .01$, and F = 6.43, df = 1/192, $p < .01$, respectively). Since the effects of the variables of interest in this analysis obviously were not simple, subsequent breakdown analyses of the two three-way interactions were performed in an attempt to localize the source of the effects. To determine the source of Achievement X Physicalness X Group Interaction, a separate 2 X 2 analysis of variance for the effects of achievement and physicalness was performed for each care group. The interaction is presented in Figure 7. The achievement main effect did not reach significance on the analysis for

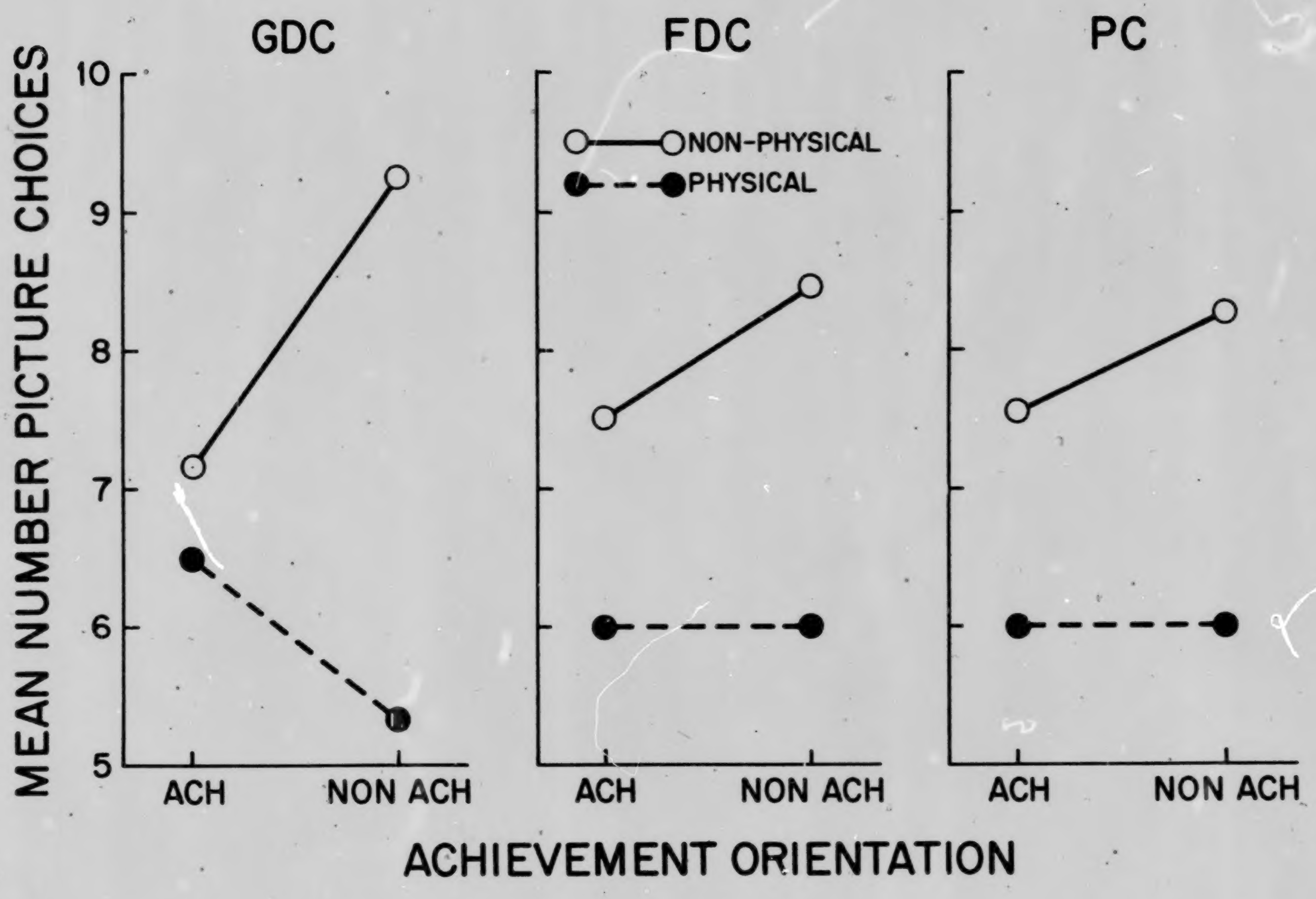

Figure 7. Care Group X Achievement X Physicalness interaction on activity preference task.

any care group. Physicalness of the toys was a significant factor in all three of the separate analyses (ps $< .01$).

The Achievement X Physicalness interaction reached significance only for GDC subjects ($F = 24.02$. $df = 1/65$, $p < .01$). When given a choice between physical and nonphysical toys that were both achievement oriented, GDC children showed only a slight preference for the nonphysical toys while children in FDC and PC showed a marked preference. When given a choice between physical and nonphysical toys that were nonachievement oriented, all subjects showed a significant preference for the nonphysical toys. That difference was accentuated for GDC children because they showed a greater preference for physical toys that were achievement oriented than for physical toys that were nonachievement oriented. Children in other care groups showed no difference in degree of preference for achievement and nonachievement toys when they were all physical.

To summarize, children in all care groups chose pictures of nonphysically oriented toys (clock, school desk, viewmaster, Noah's ark) over those involving physical activity (bike, tricycle, ring toss game, swing and slide). For GDC subjects only, that effect interacted with achievement orientation. If the toys were achievement oriented, GDC subjects showed only a slight preference for nonphysical (clock, school desk) over physical toys (two-wheel bike, ring toss game). If the toys were nonachievement oriented, however, they showed a marked preference for the nonphysical (viewmaster, Noah's ark) over physical toys (tricycle, swing and slide).

The breakdown analyses of Sex X Achievement X Physicalness interaction (see Figure 8) indicated that females preferred nonphysical toys whether they were achievement oriented or not. Males, on the other hand, showed only a slight preference for nonphysical toys when they were achievement oriented, but a marked preferred non-physical toys whether they were achievement oriented or not. Males, on the other hand, showed only a slight preference for nonphysical toys when they were achievement oriented, but a marked preference for the non;hysical over the physical toys when they were nonachievement oriented. It is interesting to note that the overall pattern of results for GDC was similar to those for males, while the overall pattern for FDC and PC was more similar to that for females. The Care Group X Sex X Achievement X Physicalness interaction as noted earlier was not significant, however.

Since the results run counterintuitive in some respects, particularly the strong preference by males for a viewmaster and Noah's ark over a tricycle or swing and slide, we are inclined to assume that the children may have responded to the task as if it were a Christmas list rather than on the basis requested. They were asked to choose which toys they would most like to play with right then if they could. Children may have treated the task as an opportunity to express their desire to have a toy that they now did not own. The lowest preference expressed by males was for the tricycle and the swing and slide. Most parents and day care workers would immediately raise an eyebrown if this stated preference were taken as an indication of actual behavioral preference. A short visit to a day care center or a typical neighborhood will reveal children fighting over the swings and bikes. They are definitely not low preference items as the children's responses on the picture preference task

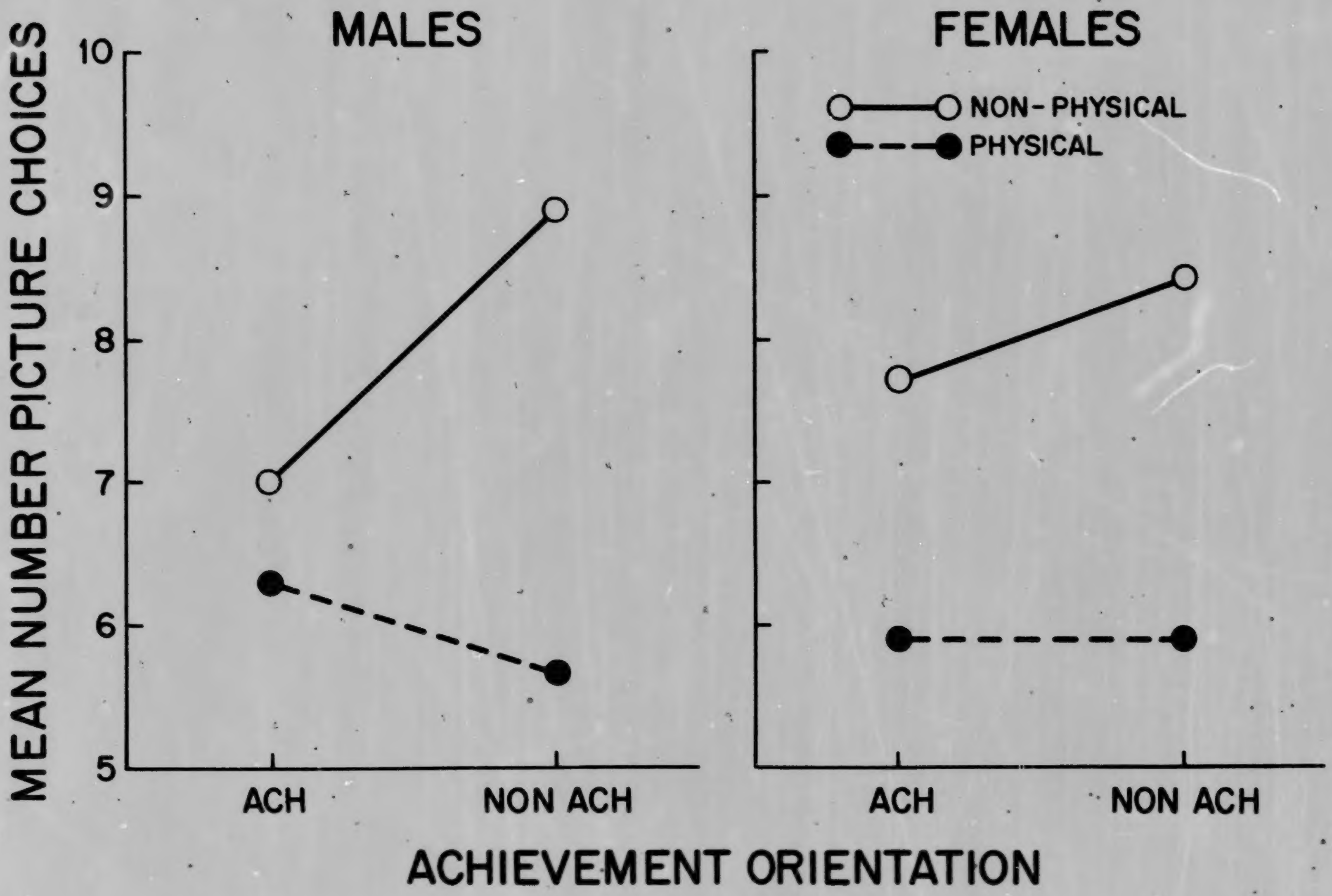

Figure 8. Sex X Achievement X Physicalness interaction on activity preference task.

would indicate. If the interpretation of "desire for what is least familiar" rather than actual behavior preference is applied, the results would suggest that children in centers spend a disproportionate amount of time on bikes and swings, compared to FDC or PC children, and have had less exposure to small, in dividual toys such as a viewmaster or Noah's ark. Neither would be viewed as practical in most centers because they are easily lost or broken. In keeping with the "desire for what is least familiar" interpretation of the results, it should be noted that FDC and PC, but not GDC children, showed a significant preference for the Child Guidance teaching clock and the Fisher Price school desk over a two-wheel bike and a ring toss game. The former toys were more likely to be familiar, in some form, to a greater percentage of the center children. Centers may not have those particular toys, but may have a large cardboard clock with moveable hands, letters on the wall, child size tables, etc.

In summary, the toy and activity preference task may have revealed little about achievement motivation of day care and non-day care children, but did suggest that the daily activities of the two groups of children (GDC vs. PC) were probably different. Because of their differential experience they reacted differently to a set of pictures of toys, each group selecting those which were least familiar.

Bean Bag Game

To provide for a more direct assessment of achievement orientation on a physical task, each child in the project participated in a Bean Bag Game. Level of aspiration and expectation of success were studied by allowing the child to select the distance he wished to stand from the target (thus regulating task difficulty) and by asking each child to predict how well he would do on each trial. Children who were concerned with doing well but had low opinions of their abilities or were afraid of failure were expected to stand very close to the target or too far away to possibly succeed. Those with more positive self-evaluations were expected to stand further from the target, but within a realistic range. These interpretations of performance are based on Atkinson's theory of risk-taking behavior (Atkinson, 1958). The assumption is made that if a child's need to achieve is stronger than his fear of failure, he will set a task goal of intermediate difficulty, while a child whose fear of failure exceeds his need to achieve will tend to make the task either very difficult or very easy.

Considerable literature has been aimed at exploring the relationship between need to achieve and maternal variables. The results of those studies suggest that achievement motivation is a product of social learning. The behaviors modeled by others and the reinforcements which children experience in their daily lives influence the degree of achievement motivation in a particular area. It was expected in the present study that high achievement need on a physical task would be associated with the care experience (1) producing low anxiety over failure, (2) providing experiences with physical tasks of realistic difficulty, and (3) providing reinforcement for achievement.

Method

Task. Materials were a 3-foot square plywood target and three bean bags. Red, white, and black bands around the six inch diameter center hole gave the target the appearance of a bull's-eye. A tape with markings at half-foot intervals was permanently fixed to the wall of the room to allow for measurement of the subject's distance from the target.

The procedure was adapted from Weiner (1972). The experimenter showed the child the target board and bean bags while explaining that the object of the game was to get all three bean bags through the hole in the target. It was emphasized that the subject could win the game by getting all three bags through the hole, although no mention of a prize was made. The experimenter instructed the child that he could stand anywhere he wished on the first trial and demonstrated the possible distances by walking backwards from the board to the far end of the room (approximately 10 feet). The child was asked to decide where he wished to stand for the first trial and asked to estimate how many of the three bags he thought he could get through the hole.

The same procedure was followed for four 3-throw trials except for the use of a fixed distance of three feet on Trial 3. (The 3-foot fixed distance was found to be the average distance that pilot subjects stood on a free choice trial.) After each trial the experimenter told the child how many bags he had gotten through the hole on that trial to ensure that the child had an accurate count to use in making his estimate of predicted success on the next trial. The experimenter was cautious to be non-evaluative in responding to the child's performance. Prior to the fourth trial the experimenter apprised the subject of the fact that those would be his last three throws.

Scoring. The following measures were recorded after each trial:

1. Distance (fixed for Trial 3).
2. Predicted Success (Child's estimate of how many bags he thought

would go through the hole on that trial. For Trial 1 the estimate was probably not based on first-hand experience. For the remaining trials the estimate could be based on his actual success on previous trials. He had to coordinate actual success information with distance stood to most effectively use that information.)

3. Actual Success

The first score below was derived from the above measures to reflect how the events of a previous trial affected predicted success (self-evaluation of ability). The second score, attainment discrepancy, reflects the subject's accuracy on each trial in predicting his actual success.

1. Goal Discrepancy
    a. Tr. 2 predicted success minus Tr. 1 actual success
    b. Tr. 3 predicted success minus Tr. 2 actual success
    c. Tr. 4 predicted success minus Tr. 3 actual success
2. Attainment Discrepancy
    a. Tr. 1 actual success minus Tr. 1 predicted success
    b. Tr. 2 actual success minus Tr. 2 predicted success
    c. Tr. 3 actual success minus Tr. 3 predicted success
    d. Tr. 4 actual success minus Tr. 4 predicted success

Results

Since an analysis of variance for care group, sex, and trials was performed for each of the five measures based on the Bean Bag game, the *F*-ratio for each main effect and interaction is presented in Table 58 to avoid redundancy in exposition.

Distance. A sex main effect and a significant Sex X Trials interaction was obtained for the distance from the target measure. As can be seen in Figure 9 boys stood over a foot further from the target on the first trial than did girls. The boys moved up on the second trial but still stood a little further than the girls. By the last trial both boys and girls were standing at a moderately difficult two-and-a-half

TABLE 58

Analysis of variance source table of care group, sex, and trial effects for five bean bag task measures

Source	df	F	Probability
Between			
Group (G)			
Predicted Success	2	.580	.57
Actual Success	2	2.251	.11
Attainment	2	1.790	.17
Goal	2	1.344	.26
Distance	2	.656	.52
Sex (S)			
Predicted Success	1	4.272	.04
Actual Success	1	2.401	.12
Attainment	1	.342	.57
Goal	1	.035	.85
Distance	1	11.274	.001
G X S			
Predicted Success	2	.215	.81
Actual Success	2	1.168	.31
Attainment	2	.495	.62
Goal	2	.451	.64
Distance	2	.287	.75
Within			
Trials (T)			
Predicted Success	3	4.593	.004
Actual Success	3	14.297	.000
Attainment	3	6.256	.001
Goal	3	18.087	.000
Distance	2	10.950	.000
T X G			
Predicted Success	6	0.788	.58
Actual Success	6	1.917	.08
Attainment	6	.841	.54
Goal	6	2.951	.02
Distance	4	.479	.75

Table 58 (continued)

Source	df	F	Probability
T X S			
Predicted Success	3	5.062	.002
Actual Success	3	2.372	.07
Attainment	3	.835	.52
Goal	3	3.992	.02
Distance	2	6.832	.002
T X G X S			
Predicted Success	6	1.097	.36
Actual Success	6	1.431	.20
Attainment	6	2.721	.01
Goal	6	.980	.58
Distance	4	1.276	.28

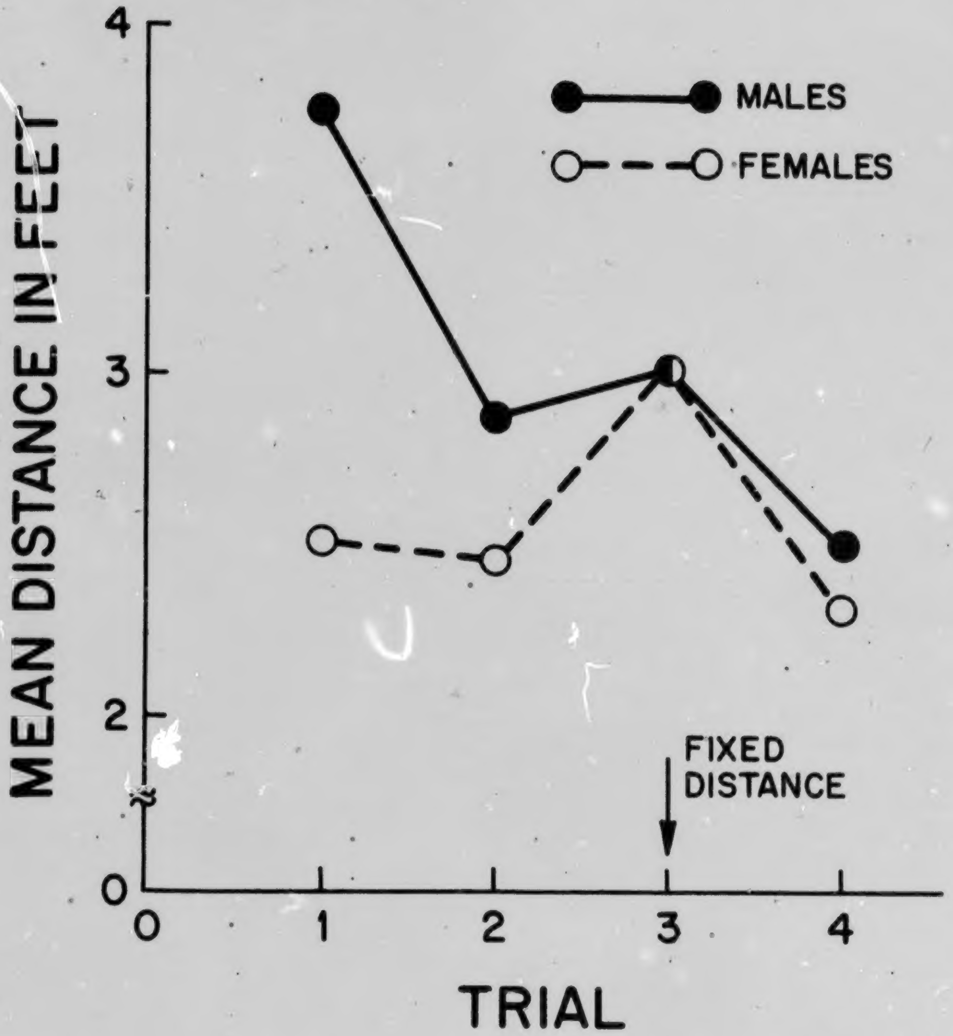

Figure 9. Mean distance from target on Bean Bag Game as a function of sex and trials.

feet from the board. Since the sex main effect and Sex X Trials interaction for the actual success measure were only marginally significant (*p*s < .10) the obtained sex difference on distance stood cannot be interpreted as a sex difference in achievement motivation. Apparently it was necessary for females to stand a little closer to do as well as boys. Girls did a little poorer than boys on the third trial when all subjects were required to stand at a distance of three feet. There was a realistic basis for them standing a little closer than the males.

The results based on mean distance do not provide a clear picture of the extent to which subjects in each care group or sex tended to be within a realistic but moderately challenging range, and the extent to which they tended to ensure success by standing very close to the target. The number of children in each care group and sex standing close, a moderate distance, or far from the target is presented in Table 59. There was no relationship between care group and distance but sex, as would be expected from the previous analysis, was significantly related to distance. Over half the subjects stood a moderate distance away (62% boys, 55% girls). Those remaining children showed quite different tendencies depending on sex. About 36% of the girls (but only 14% of the boys) displayed low risk-taking behavior and stood so close to the board that there was no possibility of failure. Only 8% of the girls (but 23% of the boys) chose a high risk distance where there was little likelihood of succeeding. In summary, the distance results revealed little difference in the number of moderate-risk takers among the males and the females, but did suggest that more females than males were influenced by fear of failure (as indexed by their standing very close to the target). There was no apparent care group difference in risk-taking on this task.

TABLE 59

Number of children in each care group and sex taking low, moderate, and high risk of failure on bean bag task

Distance	Males			Females		
	GDC	FDC	PC	GDC	FDC	PC
0 - 2 feet (low risk)	8	4	2	13	12	11
2 - 4 feet (mod. risk)	19	19	24	19	18	18
4 + feet (high risk)	6	10	7	1	3	4

Attainment Discrepancy. Prior to each trial, the child was asked to predict how many bags he would get through the hole on that trial. A significant trial effect and a significant Trial X Care Group X Sex interaction were found on the attainment discrepancy measure. As can be seen from Figure 10 the PC girls, but not males, were less accurate than day care girls in predicting their performance. The accuracy of the PC females, however, improved over trials while FDC stayed constant. The GDC girls were inconsistent over trials, being the most accurate of all girls on Trials 1, 2, and 4, but least accurate on the fixed-distance trial. Among males, the GDC and PC subjects showed little change in accuracy of prediction over trials. The FDC males were sporadic. They were the most accurate predictors on Trial 2 and least accurate on Trial 3.

Goal Discrepancy. The goal discrepancy score can be interpreted in two ways: (1) as an indication of the child's optimism about his performance potential and (2) the extent to which he is able to use past experience as a guide to making a prediction of future performance. The most optimistic child is likely to be the least realistic. A significant trials main effect, Group X Trials, and Sex X Trials interaction were found. The interactions are presented in Figure 11. Home children were more optimistic than day care children in predicting performance on the fixed distance throws but no different on the preceding trials. The day care children predicted less improvement on the fixed distance trial than on other trials. As they got ready for the last trial (and most moved closer) all subjects irrespective of care group predict an average of 1.5 bags more than they had actually obtained on the previous trial. The change in distance (toward the target on

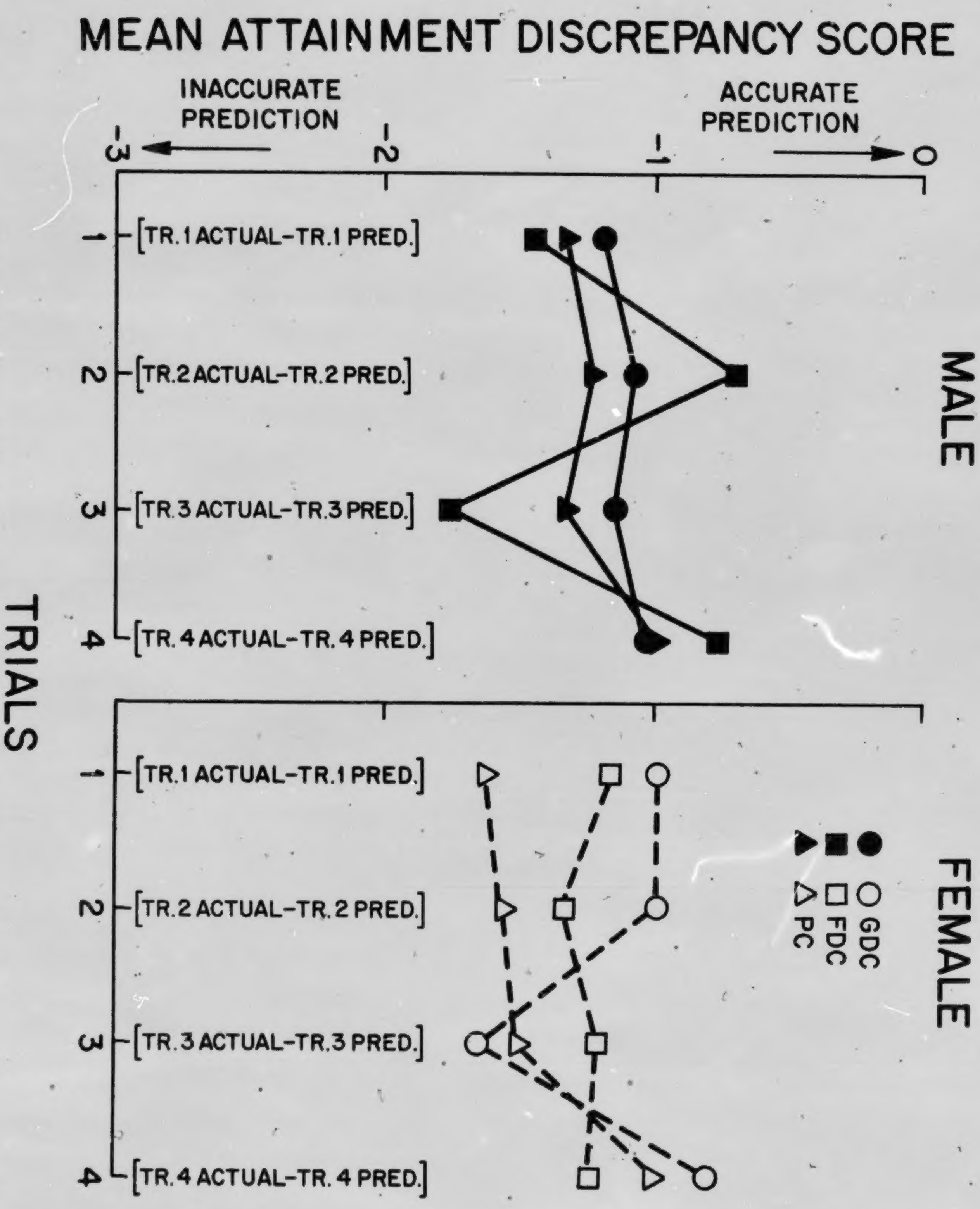

Figure 10. Care Group X Sex X Trial interaction on the Bean Bag attainment discrepancy measure.

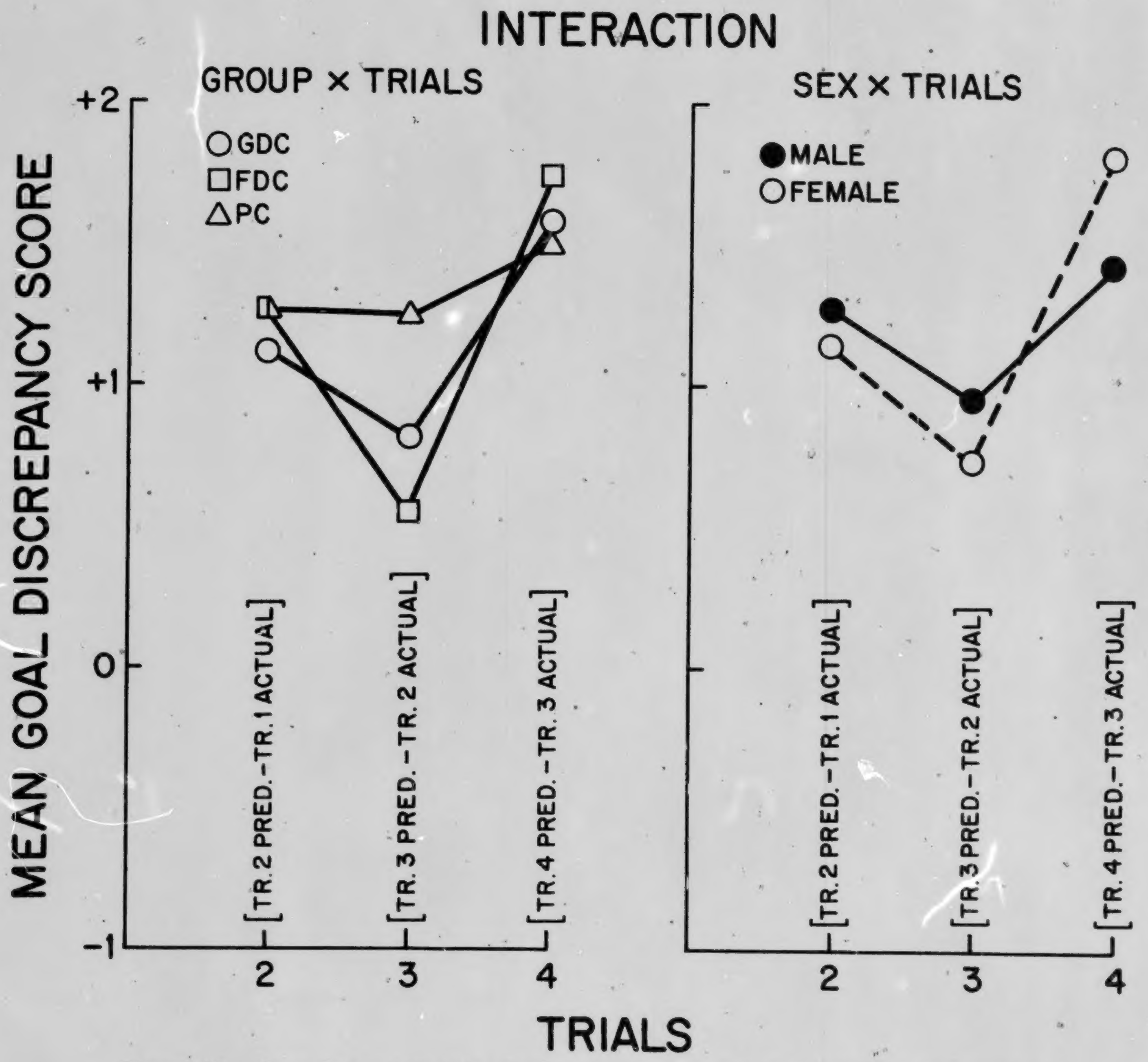

Figure 11. Care Group X Trials interaction (left) and Sex X Trials interaction (right) on the Bean Bag goal discrepancy measure.

most) was undoubtedly related to the change over trials in predicted improvement for the care groups. The Sex X Trials interaction also reflected changes in optimism by boys and girls related to changes in distance. On the second and third trials boys were more optimistic about improvement than girls, but one might well expect they should be since they had moved up considerably from the first trial. The girls, however, stood their furthest distance from the goal on the fixed distance throws, so may have perceived a bigger chance for improvement than boys as they moved up on the last trial. Boys also saw some chance for improvement, but were a little less optimistic.

To summarize, the results indicate that the girls were somewhat more likely than males to stand at a distance close enough that failure would be avoided. Girls also were less optimistic than boys about the amount of improvement they were going to show on subsequent trials, except on the last trial, when girls were more optimistic than boys. The main difference between care groups was found among the females. Day care girls (GDC and FDC) were found to be more accurate predictors on the first trial than were home girls. The PC girls tended to overestimate how well they were going to do even more than did the day care girls. Among boys, the only care group difference was the sporadic accuracy in prediction by FDC males. An overall care group difference was also found in optimism of improvement on the fixed distance thrown. The PC children were considerably more optimistic and less realistic than were GDC and FDC children about how much better they were going to do on that trial compared with the previous one.

Picture Memory Task

Level of aspiration and expectancy of success were also assessed for an academic task. By asking subjects to select the number of pictures that they thought they could remember from a graduated series, it was possible to determine whether their orientation on an academic task was one of confidence or doubt about their memory ability. As with the bean bag game, subjects were allowed to select the degree of task difficulty, but on the memory task another dimension was added. Following the procedure used by Crandall, Katkovsky, and Preston (1962), subjects were informed that the smallest number of pictures presented (three) was very easy and that most children could remember that many. They were also told that the maximum number presented (eight) was very difficult and that few children could remember the names of that many pictures. Addition of information about how other children perform on the task was expected to provide a concrete basis for the child's expression of his expectations: his memory ability is the same as other children's or it is better.

Children who were concerned with doing well but had low opinions of their abilities or were afraid of failure were expected to select three pictures to try to remember. Children with a strong need to achieve, but little fear of failure, were expected to attempt to recall four or five pictures. A child selecting four or five pictures was in effect saying, "I can remember more than most kids, but I better not try too many." He was setting a realistic challenge for himself. By contrast, a child who selects to try remembering the names of eight pictures, is setting an unrealistic challenge and probably has a low need to achieve on academically oriented tasks.

Method

Task. Materials consisted of six pages with line drawings on one side and a corresponding number of circles on the other. The pages were graduated in size from 8½ x 6½ inches to 8½ x 11 inches. Three drawings and three circles were affixed to either side of the smallest sheet; four drawings and four circles were affixed to the next largest sheet, and so on, as shown in Figure 12. Drawings were selected from the following pool: bird, pail, key, apple, flower, shoe, scissors, and glove. See Figure 13. The drawings on any given page were all different.

Using a picture of a wagon as an example, the experimenter explained to the subject that the object of this game was to try to remember the names of the pictures. After the child had successfully recalled the name of the practice picture, the six test pages were laid out in ascending order of difficulty, with the circle sides up. As each page was put out, the experimenter told the child how many circles there were and explained that there were the same number of pictures on the other side of the page. The subject was again reminded that he would be asked to remember the names of all the pictures on the other side of one page. The experimenter described precisely what would happen by turning her hand over as if it were a sheet of paper to expose the pictures, and then hiding the pictures from view.

Before allowing the child to select a page to try, the experimenter said that she had something to tell him about the pictures.

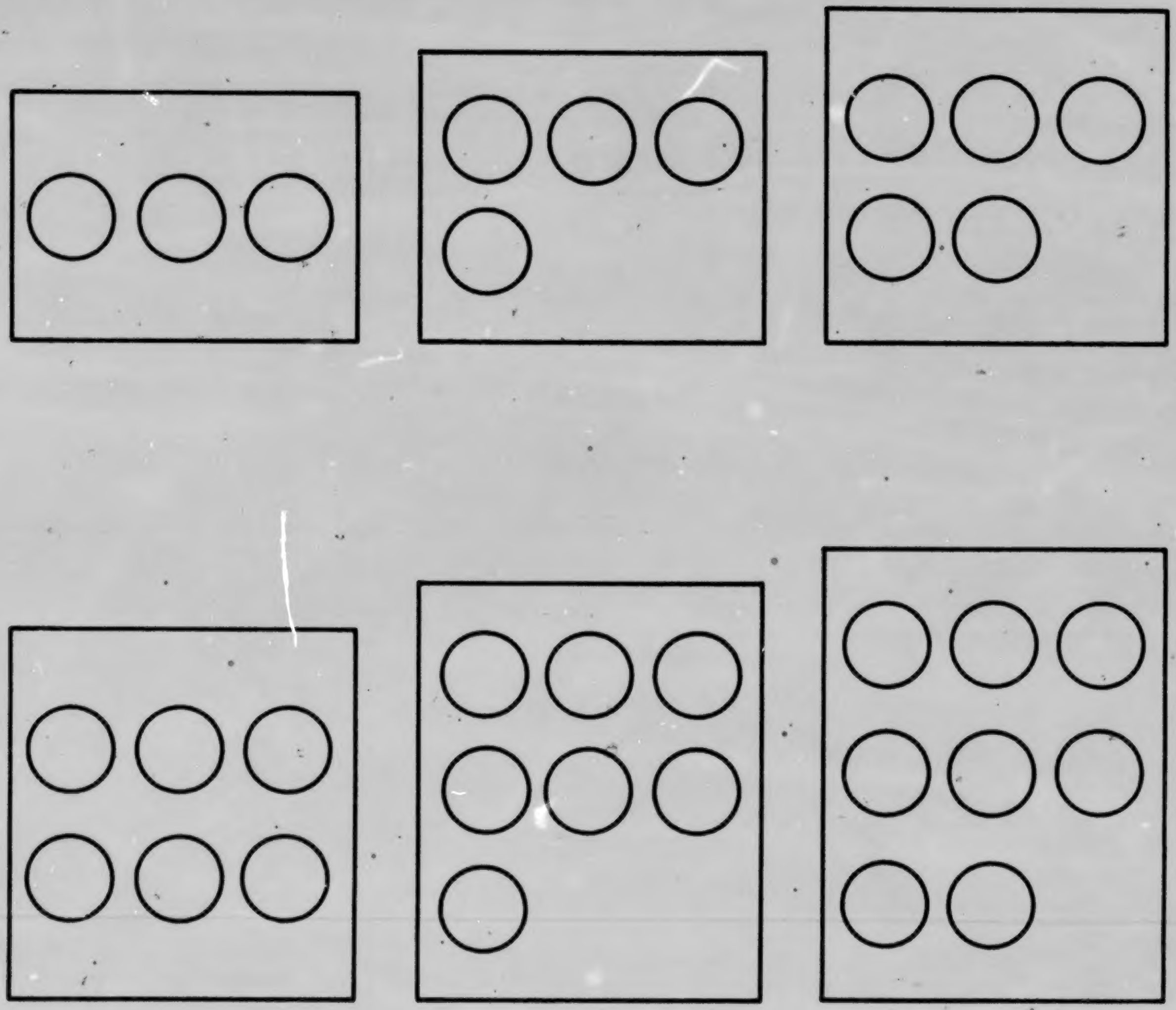

Figure 12. Schematic of circle-side of pages presented to subjects on the Picture Memory Task.

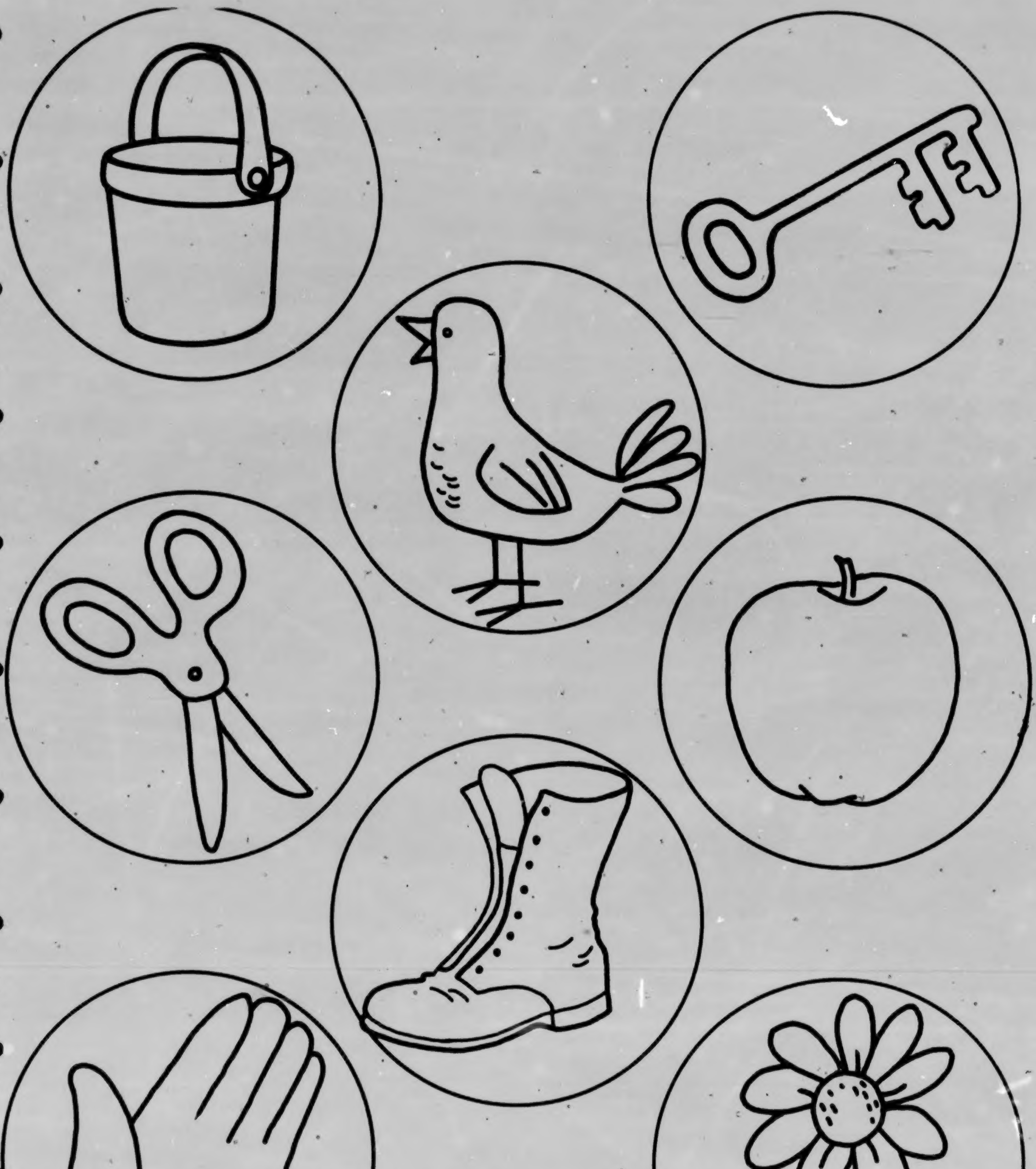

Figure 13. Example of pictures presented to subjects on the Picture Memory Task.

While pointing to the page with the three circles, the experimenter told the subject that almost all children could remember the names of three pictures; it was pretty easy to remember that many. She then pointed to the page with eight circles and told the child that not very many children could remember the names of eight pictures; it was pretty hard to do that. Given that information, the child was asked to choose the page with the number of pictures that he thought he could remember, without forgetting any names. The experimenter reiterated how many pictures were on each page before the choice was final. The page selected by the subject was turned over and the subject requested to name all the pictures. Naming ensured that the subject attended to all pictures and ensured that he knew a recallable label. The experimenter supplied the label when necessary. With circle-side up, the experimenter asked for recall. If the subject failed to respond or to recall all the pictures, the experimenter encouraged the child to think very hard. The subject was given feedback on the number recalled by the experimenter's reexposing the originally selected drawings. Following the feedback, the subject was asked to estimate how many he thought he could remember if he were going to play the game one more time. No recall data was recorded on the second trial. Verbatim instructions are presented in Appendix I.

Scoring. The following measures were obtained:

1. First estimate. (Number of pictures selected, Trial 1.)
2. Number recalled.
3. Attainment discrepancy. (Measure #2 minus #1)

4. Second estimate. (Number of pictures selected, Trial 2.)
5. Goal discrepancy. (Measure #4 minus #2)

Results

An analysis of variance for care group and sex was performed on each of the five measures of memory achievement. Table 60 presents a summary of the results of those analyses.

First Estimate. Each child was told that most children could remember three pictures but that not very many could remember eight. To emphasize the relative difficulty of the extremes of the continuum, three pictures was described as pretty easy and eight pictures was described as pretty tough. The child was told that most children can not remember the names of eight pictures; they forget some. Given that information, each child was asked to make a judgment or estimation of how many pictures he thought he could remember without forgetting any. We were interested in whether a child estimated his memory ability to be better than most other children and chose a page with more than three pictures. Of interest was also the extent to which the child would choose a number that was challenging but realistic. The mean number attempted by each care group is presented in Table 61. Analysis of variance for care group and sex differences in the first estimate of memory ability revealed no main effects or interactions. The absence of a group effect suggests that no care group consistently gave evidence of an inflated self-estimation.

A care group difference, however, was found when the children in each care group were categorized as perceiving their abilities as the

TABLE 60

Analysis of variance source table of care group and sex effects for five memory task measures

Source	df	F	Probability
Group (G)			
First Estimate	2	2.124	.12
Number Recalled	2	.135	.87
Second Estimate	2	2.363	.09
Attainment Discrepancy	2	3.558	.03
Goal Discrepancy	2	1.061	.35
Sex (S)			
First Estimate	1	1.363	.24
Number Recalled	1	.846	.64
Second Estimate	1	4.430	.03
Attainment Discrepancy	1	1.054	.31
Goal Discrepancy	1	.906	.66
G X S			
First Estimate	2	.157	.86
Number Recalled	2	.876	.58
Second Estimate	2	.693	.51
Attainment Discrepancy	2	1.571	.21
Goal Discrepancy	2	.041	.96

TABLE 61

Mean number of pictures estimated and recalled by each care group and sex

Measure	Care Mode GDC	 FDC	 PC
Males			
First Estimate	5.30	4.73	5.61
Number Recalled	3.36	3.55	3.42
Second Estimate	4.78	5.15	4.46
Females			
First Estimate	4.79	4.61	5.21
Number Recalled	3.49	3.21	3.24
Second Estimate	4.64	4.36	4.00

"same as other" (chose 3) or as "better than other" (chose 4-8). The results of that tabulation are presented in Table 62. A significant relationship between care group and category was found ($\chi^2=6.50$, df=2, $p<.05$). The PC children more frequently than GDC or FDC children estimated that they would do better than most children.

The higher estimation of ability by PC than by day care children on the first attempt of the memory task is consistent with their tendency to stand further away from the bean bag target on the first throw than day care children.

Number Recalled. Despite the fact that the care groups differed on their first estimate in the number of subjects picking more than three to try, no care group or sex differences were found in the actual number recalled. The absence of a recall difference suggested that memory capacity for names of pictures was similar for the three groups.

Attainment Discrepancy. A tabulation of the number of children who met their expectancy (accurately recalled the number estimated) is presented in Table 63. As would be expected on the basis of the PC children's tendency to choose more than three (and more frequently choose eight to try than other groups) pictures to try, they were also more likely to fail to meet their expectancy ($\chi^2=9.1$, df=2, $p < .025$). The two day care groups did not differ in the number of children failing to meet their expectancy, but both groups differed from the PC group (ps $< .05$).

Analysis of variance of the attainment discrepancy scores (number recalled minus first estimate) also revealed the group difference in

TABLE 62

Number of children in each care group estimating that they could "do as well as other children" or "do better than others" on Memory Task

Self-memory evaluation	No. pictures estimated	Care Group GDC	Care Group FDC	Care Group PC
First Estimate				
"as well as others"	(3)	26	31	17
"more than others"	(4-8)	40	35	49
Second Estimate				
"as well as others"	(3)	13	17	28
"more than others"	(4-8)	53	49	38

TABLE 63

Number of children in each care group who met their expectancy (remembered as many pictures as they said they could) and the number who failed to meet their expetancy

Expectancy Category	Care Group GDC	 FDC	 PC
Met expectancy	30	29	15
Failed to meet expectancy	36	37	51

meeting expectancy. More PC than FDC or GDC children failed to meet their expectancy and they did so by a larger margin than the day care children.

Second Estimate. Although the analysis of variance of second estimates revealed no significant care group effect, a significant relationship was found between care group and estimating memory to be about the "same as other" ($\chi^2=8.83$, df=2, $p < .05$). (See Table 62.) The care group effect reversed itself on the second estimate. On the first estimate more PC than day care children estimated that they would remember more than other children. On the second estimate, however, PC dropped their estimates considerably while day care children raised theirs. More day care (GDC and FDC) children than PC estimated that they would do better than the average on the second trial. Such a reversal is hardly surprising. Many of the PC children (those choosing 8 on the first trial) could only come down in their estimate on the second try while many of the day care children (those choosing 3 on the first trial) could only increase their estimate.

Goal Discrepancy. The goal discrepancy scores reveal the extent to which subjects predicted improvement in their recall on the second estimate (number estimated on second try minus number recalled on first try). Most subjects selected to try a page with one more picture than they had actually recalled on the first try. There was no care group of sex difference in goal discrepancy, suggesting that the decrease in number estimated by PC and the increase in number estimated GDC and FDC on the second trial, brought each group within one picture of the actual number recalled.

Years in Day Care. Based on 81 matched pairs of GDC and FDC subjects, an analysis of variance for care group, sex, and years in day care was performed on attainment discrepancy scores. Years in day care was not found to interact with day care group, nor was a main effect found. Apparently even late-entry into day care led to improved ability to predict the number of pictures they could recall over the ability of PC children.

Summary

The results of both the bean bag and the memory task suggest that home children were more unrealistic on their first attempt at a task than were day care children. The home children adjusted their estimations of ability to a more realistic level on subsequent trials but initially overestimated their ability. The difference between care groups on the first attempt on both tasks may reflect a lower fear of failure among the PC children than among day care subjects.. The competition for teacher or day care mother approval of performance may lead some day care children to be more cautious in setting task difficulty than PC children. Also, mothers may be more likely than non-mother caretakers to praise a child simply for trying, irrespective of his actual performance.

CHAPTER 12

IMPULSE CONTROL

A major goal of many preschool and day care center teacher is to optimize the child's chances for success in the public school setting. One of the behaviors deemed necessary for success is self-control--doing what you are supposed to when and how you have been instructed. The child must learn that he cannot always do what he wants to or have what he wants to at the very moment he desires it. In almost any group setting, children (and adults) are expected to display an increasing ability to wait their turn to talk, eat, enter a play area, etc. Most day care situations, particularly centers, provide considerable training in inhibition of behavior. A child at home may not always be allowed immediate gratification of need or always be allowed to respond on impulse, but the amount of time between the introduction of a stimulus and the response is likely to be less for home children. For example, the wait for all individuals at the table to be served at meal time will typically not be as long for the home or FDC child as the center child. Also at home the child usually continues his play or converses with the mother while the final preparation and serving of the meal takes place. Because of the complexity of the washing hands and toileting process in most centers, the child often must wait from 15 to 45 minutes from the time the group begins to get ready to sit down for lunch, and the actual eating. Frequently a share of that time is spent sitting idly at the table awaiting the food and the ultimate instruction to eat. We were struck when visiting centers how much of a child's time is spent waiting for snack and lunch with no mediating activities provided.

The effects of day care on the ability to delay, inhibit, and/or control the rate of responding was explored using a delay of gratification task and two motor impulse control tasks.

Delay of Reward

There are many every-day situations in which a delay, mediated by more work or study typically results in a larger or more valued reward. Several studies have, however, shown marked individual differences in subjects' willingness to wait for a larger reward when a smaller one is immediately available. Even when no extra effort is required of the subjects, many show a preference for the smaller, immediate reward.

Several subject variables have been shown to be related to preference for delay: perceived locus of control (Strickland, 1973), age level (Mischel & Metzner, 1962; Mischel, 1966), intelligence (Mischel & Metzner, 1962), and impulsivity (Lang & Adair, 1968). One possible reason some children do not choose to delay is that they have not experienced consistent "pay off" for delaying. This hypothesis received some support in studies by Mischel (1966) and Lawton (1966). Perceived trustworthiness of the person controlling the reward was found to be related to delay behavior.

Another variable which would be expected to influence delay behavior is the type of behavior modeled by parents, teachers, and peers. Staub (1972) has found that the frequency of subjects' delaying can be increased by their observing modeled delay behavior. A significant increase in the number of seventh grade subjects' willingness to wait as long as two to three weeks for the more valuable reward was obtained through modeling procedure. Presentation of reasons for why delaying was in the child's self interest was also found to be effective.

The influence of day care on delay of reward behavior was difficult to predict. On the one hand, one might expect more day care children to delay because of the experience they have in waiting for any kind of pay off, not necessarily a bigger reward, but any type of toy, attention, or snack. From another perspective, however, one might expect fewer day care children than home children to delay because of a tendency for parents to indulge their children during the time they do spend with them. In our interviews many mothers of day care children spontaneously commented that they were not as strict with their children as they would be if they did not work because they wanted the child to feel that their time at home is a special time, or because they felt guilty for leaving the child all day.

Method

Task. Immediately following the Bean Bag Game the subject was told that the experimenter thought that it was time for a piece of candy since the child had worked so hard. The experimenter removed a large (5¢) tootsie roll and a small (1¢) tootsie roll from a bag and asked the subject to point to the one that had more to eat. The child was also asked to indicate which one he liked more. With few exceptions the subject said he wanted the big one. The following choice was offered to the child at this point:

> I have already promised this big one to another boy/girl and it's the last one I have . . . so I can't give you this one. I could give you this one (hold up little candy). (Pause.) Let me see . . . what can we do. Well, I could give you the little one right now or if you want, I could go to the store tonight and bring you a big one next time. I can only give you one piece of candy--a little one now or a big one next time. If you eat one now, I won't bring a big one tomorrow. Which would you rather do? Would you like the little one right now, or would you like to wait until tomorrow for a big one? Which--a big one next time or a little one now?

The subject's choice was recorded, and the candy given or withheld until the next session in accordance with the child's choice.

Scoring. The following measure was obtained:

1. Frequency of subjects' delaying. A score of 1 was given for opting to wait for the big candy and a score of 0 for choosing the immediate reward.

Results

The percentage of children in each care group and sex who delayed is presented in Figure 14. The partitioning of the chi square to assess the influence of care group, sex, and delaying revealed a marginally significant interaction between care group, sex, and delay ($\chi^2 = 5.84$, df = 2, $p < .10$). The source of the

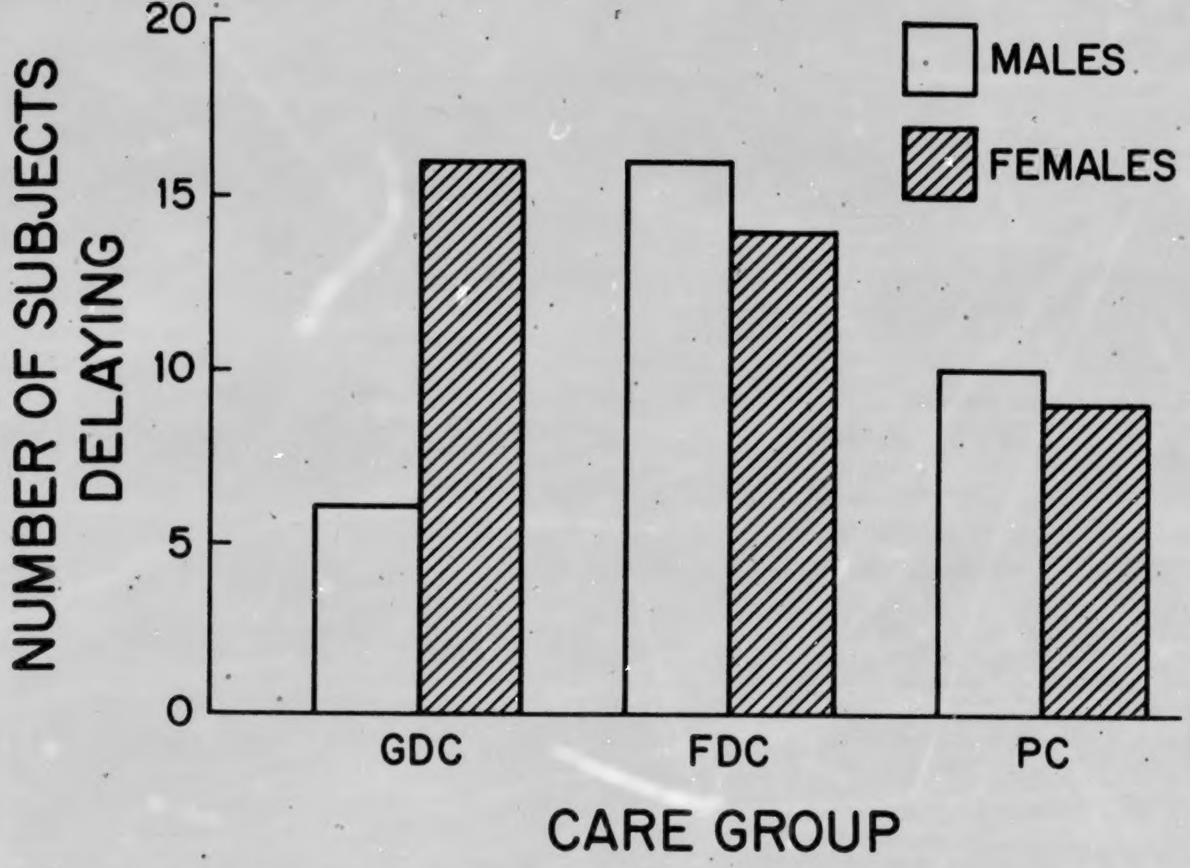

Figure 14. Number of boys and girls in each care group delaying gratification.

interaction was the reversal of sex effects among GDC children. About the same proportion of boys as girls delayed in FDC and PC groups, but among the GDC children less than half as many boys (18.2%) as girls (48.5%) delayed. The reason for the sex difference among GDC children is not clear, especially in light of the fact that children were matched across groups on the basis of race and mother's education, variables one might expect would be related. Also, Boger (1969) found no differences due to sex in a sample of Head Start children using an identical procedure.

One possible reason for the sex difference within GDC could be a confounding of care group, sex, and years in day care. To explore this possibility the 66 matched GDC and FDC children from the above analysis plus 15 additional matched GDC and FDC pairs were categorized according to care group, sex, years in day care, and delay behavior. The percentage of children in each subgroup delaying is presented in Table 64. The partitioning of the four-way chi square revealed no relationship of years in day care with the other variables. Apparently the Care Group X Sex X Delay interaction obtained in the original analysis, including all care groups, was not confounded by a years in day care effect. The relationship between care group, sex, and delaying was found to be significant in the four-way partitioning ($\chi^2 = 4.88$, $df = 1$, $p < .05$). As before, the interaction was attributable to a large sex difference in the proportion of boys and girls in GDC delaying (16.7 vs. 43.6%) and small sex difference among FDC children in the opposite direction (47.6 vs. 41.0%).

TABLE 64

Percentage of early (1-2 yrs.) and late (3-5 yrs.) entry day-care boys and girls choosing to delay reward.

Years in Day Care	Males		Females	
	GDC	FDC	GDC	FDC
1-2 years	25.0	52.4	45.0	43.8
3-5 years	11.5	42.9	42.0	39.1

Although the children were matched across care groups on the basis of number of parents, the possibility that number of parents interacted with care group and sex could not be overlooked. To ensure a sufficient subgroup size, the analysis for a relationship between care group, sex, number of parents, and delay was based on all (matched and unmatched) white subjects ($n = 227$). The percentage of subjects in each subgroup delaying is presented in Table 65. A partitioning of the four-way chi square revealed only a significant interaction between care group, sex, number of parents, and delay ($\chi^2 = 6.67$, $df = 2$, $p < .05$). Coming from a two-parent or one-parent family had no influence on the proportion of males and females delaying among FDC children. Among GDC and PC children, however, father absence had a marked influence that was sex-related. Over half (57.7%) of the two-parent GDC girls delayed, while only 15.4% of the one-parent GDC girls did. Among PC children, number of parents influenced the percentage of boys delaying similarly. About 33% of the two-parent PC boys delayed, but not one of the one-parent boys did. Unfortunately, we have no basis for even a conjecture about the reason for this interaction between care group, sex, number of parents, and delay. Why number of parents would influence delay of girls in GDC and not FDC is not at all obvious.

In summary, care experience had little relationship to delay reward for girls but was found to be related to the delay behavior of boys. The highest proportion of boys delaying was found among FDC boys and the lowest GDC. The expectation that the center experience might foster delay behavior was not supported.

TABLE 65

Percentage of one- and two-parent children in each care group and sex who chose to delay reward

Number of parents	Males			Females		
	GDC	FDC	PC	GDC	FDC	PC
One—parent	13.33	43.75	0.0	15.38	35.71	45.45
Two- parent	16.67	54.17	33.33	57.69	48.00	25.93

Motor Impulse Control

Several studies have reported finding a significant correlation between the ability to inhibit a motor response and performance on the Stanford-Binet intelligence test among preschoolers (Banta, 1970; Massari, Hayweiser, & Meyer, 1969; Maccoby, Dowley, Hagen & Degerman, 1965). The measures of ability to inhibit a motor response in these studies were the Draw A Line Slowly (DAL) and Walk Slowly (WAL) tasks devised by Maccoby, et al. In each of these tasks the child is instructed either to draw a line to complete a picture or to walk within tape marks on the floor as slowly as possible. Massari et al. reported evidence which suggests that the relationship between IQ and DAL times is not simply a function of ability to follow or comprehend instructions. The WAL times under no instructions during a pretest were highly correlated with time under instruction to go slow. Consistent with their evidence, Harrison and Nadelman (1972) reported a significant correlation between the original DAL and WAL times and time under instructions to go slowly. Also, IQ was found to be significantly related to both the WAL pretest time and the WAL post-test times in the Massari, et al. study. The results of these two studies suggest that controlled responding, whether the child's normal style or induced by instruction, is related to some aspect of Stanford-Binet performance. According to the Nadelman and Harrison study, controlled responding is also related to latency and error measures on the Matching to Familiar Figures Test (MFFT). Individual differences in the ability to control response rate on a motor task apparently are also found on a perceptual processing task.

As noted in the general introduction to impulse control, one would expect that the training given to children in matching products to teachers' expectations and the training in withholding response until instructed in centers, would facilitate the acquisition of a controlled style of responding. Center children do, however, receive relatively less exposure to an adult model who is engaged in product-oriented behavior. Impulsiveness of a model has been found to influence children's performance on the MMFT (e.g., Yando & Kagan, 1968).

Method

Draw-A-Line Slowly Task (DAL). Materials were a felt tip pen, a 12-inch ruler, and four sheets of 8-1/2 x 11 inch paper. One sheet was blank while the other three each had an identical drawing of a teddy bear holding three balloons. The string was missing from one of the three balloons in each of the drawings. An eight inch line was necessary to supply the missing string. (See Figure 15.)

The experimenter demonstrated how to use the ruler to draw a straight line on the blank sheet and asked the subject to practice. When the child had shown that he could coordinate the pen and ruler to draw a line, he was presented with a picture of the teddy bear. The experimenter pointed out that one string was missing and suggested that the subject draw a string with the ruler. The experimenter explained that the wind might come along and blow the balloon away if

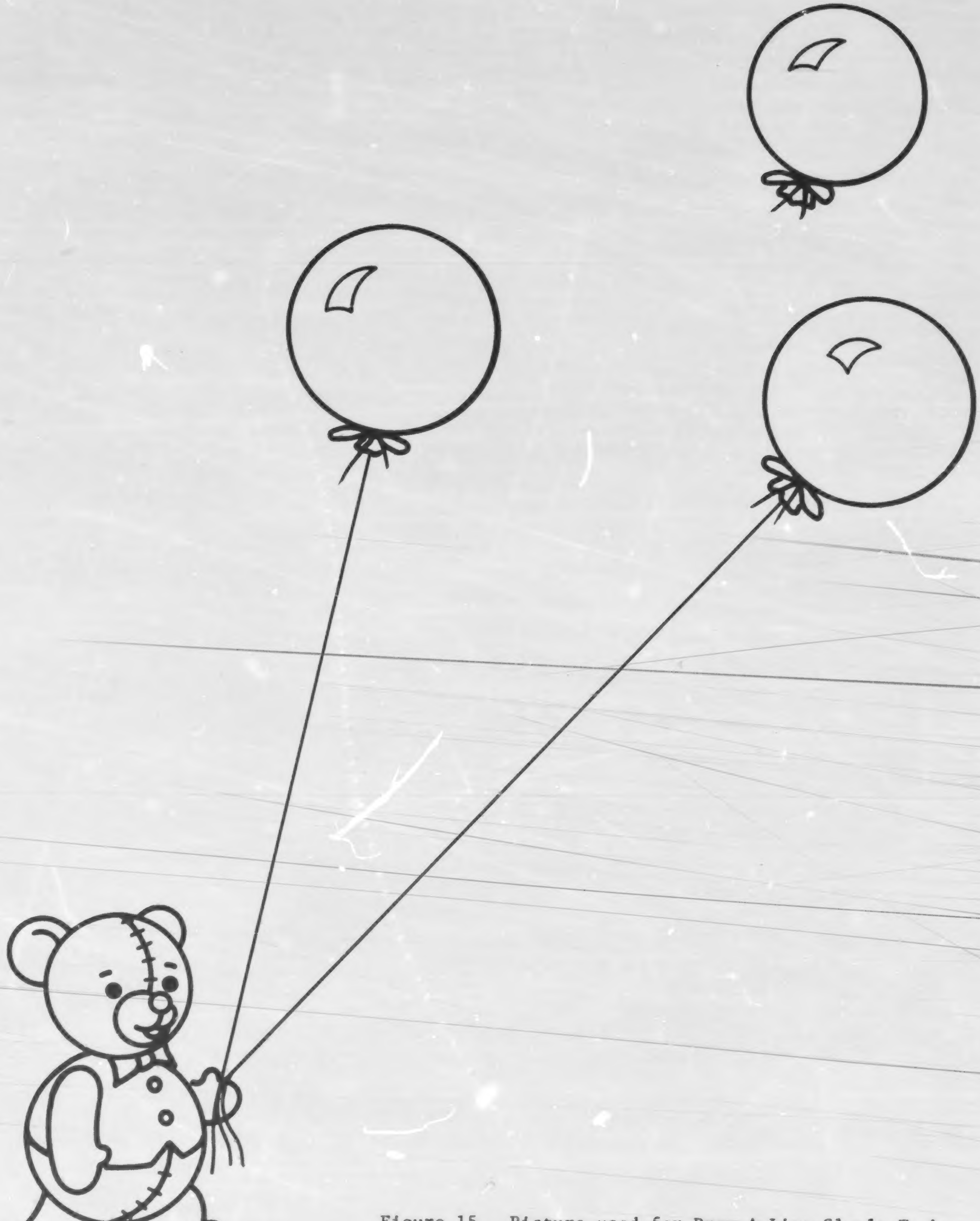

Figure 15. Picture used for Draw-A-Line-Slowly Task.

the bear did not have a string. The subject's line-drawing time was recorded and used as a baseline against which to compare drawing time under instructions to go slowly.

Using the second drawing of a teddy bear, the experimenter demonstrated a special way to draw a string. The experimenter took approximately 60 seconds to draw the eight inch line, telling the subject as she drew that she was drawing "verrry slooowly." The purpose of the slow demonstration was to give meaning to the word "slow." The child was then handed another picture of the bear. The experimenter said she wondered how slowly (child's name) could draw a string. Drawing time was recorded (Trial 1). As the child was handed the last picture of the bear, the experimenter said that (child's name) had gone pretty slowly on the last string, but that she wondered if he/she could draw even slower this time. Drawing time was recorded (Trial 2). Intervals when the pen was lifted from the paper or stopped were not included in drawing time.

Care was taken during the transitions from one drawing to the next to make no comments that could be interpreted as expressing approval or disapproval for the child's speed or quality of line drawing. After each line, the experimenter simply commented that now the bear had a string so the wind could now blow his balloon away. The experimenter's slow line was described as a "special way" to draw a line, not a "better way" or the "right way."

Scoring. Two measures were used to assess ability to control motor impulses.

1. Tr. 1 Diff. Difference between Trial 1 drawing rate and normal time.
2. Tr. 2 Diff. Difference between Trial 2 drawing time and normal time.

Pull-A-String-Slowly Task (PAS). A second motor impulse control task, (PAS) was introduced, the Pull-A-String Task, in order to provide a situation with somewhat greater face validity for the child. Most children are accustomed to contingencies being applied to situations involving a "goodie." They are told that if they are good in the car they can have a treat when they arrive at their destination, for example. The Pull-A-String Task is somewhat more analagous to this type of experience than DAL. It also does not involve the imitation element (since no demonstration was given) or the request for compliance, for compliance sake. The child is told there will be a desirable reward for inhibiting his impulse to pull quickly. Materials were a 3-foot long opaque tube, a 7-foot string, an alligator clip, and a small plastic toy. Prior to the subject's entry in the van, the toy was attached to the clip on the end of the string and it was lowered to the bottom of the tube. The extra 4 feet of string was allowed to dangle down the side of the tube.

The experimenter introduced the task to the subject by exclaiming that she had something she would like to show him--a funny looking tube. She explained that there was a surprise on the end of the string way down in the bottom of the tube and that the child might take the surprise home with him if he pulled the string out very slowly, as slowly as he could. A knot in the string indicated the starting point and another knot signaled the surprise. The time to pull the string from knot to knot was recorded. One trial was given. The subject was allowed to keep the toy irrespective of his actual pulling time.

Scoring. One measure was obtained:

1. Time to obtain toy.

Results

Draw-A-Line. The mean drawing times for the two trials under instucions to "go slowly" are presented in Table 66. (The times represent the difference between normal drawing time and time on each trial with "go slowly" instructions.) The scores were extremely variable, with a couple of children actually taking less time under "go slowly" instructions than they had under no instruction and others taking as long as 90 seconds over their original drawing time. The absence of a significant Fmax and a failure to find a difference in care group medians, $\chi^2<1$, suggests that the high variability and positive skew of the drawing times were equally characteristic of the three care groups. Apparently, positive skew is not unusual on the DAL task. Boger and Knight (1969) reported that their field test DAL data with Head Start children were not analyzable because of the skewness of the distribution and the proportionality of means and variances.

Because of the similar tendency toward positive skew in our data, the analysis of variance for group, sex, and trials was performed on log-transformed scores as well as raw time scores. The results of the

TABLE 66

Mean time in seconds on Draw-A-Line and Pull-A-String tasks under instructions to "go slowly" for each care group and sex

	Draw-A-Line[b]		
Group[a]	Tr. 1-Diff.	Tr. 2-Diff.	Pull-A-String
GDC			
Males	20.133	19.682	28.400
Females	22.176	20.142	26.958
FDC			
Males	22.464	20.824	29.036
Females	20.239	18.588	23.212
PC			
Males	22.433	21.694	31.518
Females	25.373	21.333	30.760

[a] Matched triplets only (N = 198)

[b] Difference between normal time and draw-slowly time

analysis of untransformed data revealed only a significant trial effect ($\underline{F}$=3.80, $\underline{df}$=1/192, $\underline{p} < .05$). The results were unchanged with log-transformed data. Children drew slower on the first trial than on the second. It was asking too much of most children to expect them to go "verrry sloowly" two times in a row. Some children did, however, adding to the variability of the drawing times.

The failure to find a care group difference in children's ability to control response rate suggests that the formal preacademic training given in many centers has had little influence on one general ability that has been shown to be related to IQ performance. Even the time spent in "controlled waiting" failed to affect performance.

To test for the possibility that perhaps day care experience may have facilitated the control of rate for children with several years of day care experience but not those who had entered more recently, an analysis of variance for day care group (GDC, FDC), sex, and years in day care was performed on Trial 1 scores. The means are presented in Table 67 for each subgroup. Only a significant Sex X Years in Day Care interaction was found ($\underline{F}$=3.85, $\underline{df}$=1/54, $\underline{p} < .05$). Care Group did not interact with years in care. Contrary to what one would expect, females who had been in day care only 1-2 years tended to show more impulse control than other day care subjects. Since the early-entry day care girls were more similar to PC females in mean drawing time than to GDC or FDC late-entry girls, the results suggest that long-term experience in day care decreased rather than increased response control on the DAL task for girls.

TABLE 67

Mean time in seconds on Draw-A-Line and Pull-A-String tasks under instructions to "go slowly" for early (1-2 yrs.) and late (3-5 yrs.) entry day care children

Group[a]	Draw-A-Line[b] Tr. 1-Diff.	Pull-A-String
GDC		
1-2 years DC		
Males (n = 16)	19.34	31.42
Females (n = 20)	25.31	30.43
3-5 years DC		
Males (n = 26)	19.67	22.43
Females (n = 19)	20.86	25.22
FDC		
1-2 years DC		
Males (n = 22)	19.23	19.79
Females (n = 16)	26.99	27.26
3-5 years DC		
Males (n = 20)	22.14	32.70
Females (n = 23)	18.82	23.77
PC		
Males	22.43	31.52
Females	25.37	30.76

[a] GDC & FDC composed of matched doublets (N = 162)

[b] Difference between normal time and draw-slowly time

One interesting observation was made when comparing our results with those of previous studies. Typically children have been reported to draw from 1-10 seconds slower than their base rate under "go slowly" instructions, with or without a 30 second demonstration (Bucky & Banta, 1972; Harrison & Nadelman, 1972; Massari, et al., 1969). Our subjects, however, drew a mean of 22 seconds slower under instruction. Two factors may have accounted for the slower drawing times of our subjects: a long demonstration and good tester-subject rapport. We demonstrated "going slowly" by taking at least 60 seconds to draw the line. Massari, et al., demonstrated by taking 30 seconds, while the other two studies did not report giving a demonstration. Perhaps the 60 second demonstration was more discriminable to the subject. Also the experimenter may have facilitated the child's understanding of exactly what he was to do under instruction. The experimenter commented as she reached the half way point that she was going "verrry sloowly"; then as she came within the final inch or two of the line, she commented, "I'm almost there but I'm going very slowly." These comments had been intended simply to help focus the child's attention of the drawing process, but the actual timing of the verbalizations may have made the demonstration more powerful than the typical one.

It should also be noted that the use of a ruler in this task was critical to obtaining slow performance. It is unrealistic to ask an adult or a child to draw a straight line slowly without one. Even a four year old knows that without a ruler you can draw a better line going fast. Only with the ruler is the product as good going slowly as going fast.

Massari, et al. reported evidence suggesting that the relationship between IQ and DAL performance was not simply due to ability or willingness to follow directions. The results of a study by Bucky and Banta (1972), however, do suggest that there may be a compliance factor in DAL slow performance. They found that race of experimenter and social atmosphere created by the tester influenced drawing times. Both black and white children showed better impulse control when tested by a white experimenter. Ratings made during the sessions revealed that white experimenters provided a more positive social atmosphere than black experimenters for both white and black subjects. The positive social atmosphere created by the white experimenter apparently was not sufficient to eliminate a race effect, however. White children still drew slower than black children on the DAL. The fact that the race difference was eliminated in the present study ($F = 1.72$, $df = 1/90$, $p < .20$) and that all children drew markedly slower than in previous studies, suggests that the testing situation can influence DAL performance just as it has been shown to influence IQ test performance. The fact that our black sample slowed down an average of 19.08 seconds in contrast to 1.86 seconds in the Bucky and Banta study (White E - Black S), underscores our contention that the demonstration, rapport between the tester and subject, or both, can markedly alter the results. (Also, the fact that the race comparison was made in our study between subjects matched for care group, mother's education and number of siblings may have eliminated a source of difference.)

That willingness to do what was requested entered into the picture was evident in the defiant comments made by a few of the children when asked to go slowly a second time (DAL tr. 2). They would look at the tester out of the corner of their eye and exclaim, "I'm going to go fast this time," and they did. Since most children did comply with the instructions and go slower than their original rate, however, we might explain their behavior by reference to a social learning model. It has been shown in numerous studies that the characteristics of the model influence the degree of imitation that will occur (cf., Mischel, 1966). The relationship (as friend and controller of "goodies") that the tester had established with the subject over the course of two days of testing may have strongly influenced the impact of the demonstration and instruction to "go slowly." Had the same task been administered during the first encounter with the child, the children probably would not have drawn nearly as slowly and a race effect probably would have been found.

Some support for the contention that there may be a strong compliance factor in slow drawing performance on the DAL was found in the correlational data. A significant correlation between the Child Behavior Rating Cooperation Cluster and DAL tr. 1-2 difference scores was found. Going even slower on the second trial than on the first was related to the teachers' and mothers' (but not day care mothers') ratings of subjects as being cooperative ($\underline{rs}$ = .35 and .31). A cooperative child was defined as one who asks nicely for a toy, takes turns, never hurts others or says mean things, and probably, most important to the correlation, is a child that adults enjoy. It is not surprising that the child who is cooperative by adult standards would also be the child who, in effect, does what he is told on the DAL task two times in a row.

Pull-A-String. PAS performance was found to be significantly correlated with both Trial 1 DAL ($\underline{r}$ = .53) and Trial 2 DAL ($\underline{r}$ = .58) performance, suggesting that the two tasks tapped similar motor response inhibition abilities. The mean pulling time for each care group and sex is presented in Table 66. Although the mean time was relatively slow for all groups, high subject variability was found again. Some subjects obtained the toys in as little as three seconds, while one subject took 135 seconds. Analysis of variance for care group and sex on both raw times and on log-transformed times revealed no care group or sex effects (all Fs<1).

To determine whether PAS performance was affected by years in day care the same way DAL performance was affected, an analysis of variance for day care group (GDC, FDC), sex, and years in day care was performed. Although the means were in a direction consistent with the results of the DAL task (see Table 67), the Sex X Years in Day Care interaction did not reach significance on the PAS task. Early-entry into day care for girls did not significantly speed up their pulling times, although it should be noted that both GDC and FDC girls who had entered day care early pulled about 5 seconds faster than did those who had ended later.

Task Correlations. Based on an overall correlation matrix which included 78 task measures, an interesting pattern of correlations with the motor impulse control tasks was found. Table 68 presents those task measures for which a significant (p <.01) correlation with the DAL or PAS task was found.

Although we did not score the Draw-A-Person task as stringently as is typical when applying the Harris-Goodenough criteria, the correlation of both motor impulse tasks with articulation scores on the DAP is consistent with the reported correlation of DAL performance with the

TABLE 68

Correlations between Impulse Control measures and other child behavior task measures

Task	Draw-A-Line Trial 1	Draw-A-Line Trial 2	Pull a String	Delay of Reward
Pull-A-String	+53	+58		
Delay of Reward				
Draw-A-Person				
Articulation Male	+32	+28	+25	
Articulation Female	+27	+29	+21	
Articulation Self	+29	+29		
Self-Concept				
Smart self-rating		+20		+23
Achievement				
Non-physical achiev. toy pref.		+21	+20	
Number of occupations		+22		
Sex-Role				
Neutral toy preference			+27	
Attachment				
Parent (Frustrated Story)				+23
Parent (Sick Story)			+21	

Note--Table includes only significant correlations ($p<.01$) from a 78 measure correlation matrix.

Stanford-Binet (Maccoby, et al., 1965; Massari, et al., 1969). The significant correlation of DAL Trial 2 performance with a high self-rating on being smart (r = .20), may reflect a tendency for adults to praise a compliant child as smart. Parents and teachers do not infrequently equate being "good" with being smart. As would be expected from the correlation of DAL performance with IQ measures, performance was found in the present study to be correlated with two measures of achievement motivation: a preference for non-physical-achievement-oriented toys over non-achievement-oriented toys and giving occupational choices in response to a question about being a grown up.

The absence of a correlation between delay of reward and motor impulse control, or between delay and articulation of human figure drawings, would indicate that the same variables do not underlie controlled responding in the two situations. At least at four years of age, there was no evidence that ability to delay gratification was related with behaviors which would typically be viewed as predictors of school success (intelligence and achievement motivation).

Summary

It had been expected that experience in a day care center environment would enhance delay of gratification performance and lead to greater control of response rate on the motor impulse control tasks. The results failed to confirm that expectation. It was found, instead, that center experience, was associated with a lower proportion of boys' choosing to delay than was FDC or PC experience (signifacantly lower than FDC). Since there was no reason to expect that working mothers with children in GDC would be more indulgent toward their boys than working mothers of children in FDC, it seems unlikely that differences in parental indulgence account for the care group effect among boys. It may be that particularly among boys, "controlled" behavior goes unnoticed in the group setting because of the many responsibilities of the teachers, but attention is instead given to uncooperative, impulsive behavior. This pattern may be particularly true of centers whose teachers were rated as restrictive rather than encouraging in their interactions with children.

The expectation that center experience might facilitate the development of controlled motor behavior was also not confirmed. In fact, it was found that on the DAL task, girls who had entered day care early were less controlled than those who entered late or had not experienced day care. There was no evidence on either the PAS or DAL task that day care experience improved children's performance on a skill that has been shown to be related to IQ test performance.

CHAPTER 13

COOPERATION, HELPING, and SHARING

Cooperation

A recent series of studies has suggested that cultural values and socialization processes influence the extent to which children display cooperative behavior. Cooperative-competitive behavior was assessed using games that were designed to make competitive responding maladaptive to participants. That is, rewards were attainable only if subjects worked together and took turns. Urban children in both Mexico and Israel were found to be strikingly more competitive than rural children (Madsen, 1967; Shapira & Madsen, 1969, 1974). The authors reported that the general behavior of the rural and urban children contrasted vividly. Urban children (particularly Anglo- and Afro-American) sometimes engaged in aggressive physical and verbal behavior, whereas rural children approached the situation much more quietly. In general, the series of studies revealed that urban children, whether Mexican, Mexican-American, Afro-American, or Israeli, were more similar to each other in their response to the cooperation games than they were to rural children of the same ethnic background. This observation led Shapira and Madsen to the conclusion that ethnicity itself was not the critical variable influencing cooperative-competitive behavior but life style, subcultural values and socialization processes were probably the important factors underlying differences in behavior.

Comparison of children raised in the kibbutz with nonkibbutz Israeli children provides an opportunity to compare children raised under socialization conditions known to differ markedly. Kibbutz children are raised in collective peer groups in which the children not only spend all their waking hours together, but eat and sleep together as well. The peer group collective is the socialization unit rather than the family, although the kibbutz children do have contact with their parents. In a more recent study, Shapira and Madsen (1974) found that kibbutz children worked more cooperatively under conditions which would lead to self reward or to group reward than did urban Israeli children. Kibbutz children were found to be willing to take a personal loss to obtain a group goal when two groups of children were placed in competition. The authors concluded that kibbutz children were more competitively motivated to between-group competition than between-individual competition, a result consistent with kibbutz socialization practices.

The large number of mothers in the work force in the United States has resulted in the placement of many children in group care situations during the day. In most day care centers children play, work, eat, nap, and learn to cooperate as a group in many of their daily activities. While the day care center is charged with the task of facilitating the child's social and intellectual development generally, the transmission of traditional cultural values is left primarily to the parents. This is in contrast with the kibbutz society where the child care collective is charged with the entire task of socialization and education, although the children maintain contact with their parents. Despite the many philosophical and length-of-peer-exposure differences between the kibbutz child care collective and the U.S. day care center, both share the circumstance that large number of children must live together for at least a part of their day and learn to get along. Both settings emphasize group spirit to some extent and focus on the general behavior of the group (although centers differ greatly in the extent).

If one assumes, as many mothers and teachers do, that experience in working and playing with other children facilitates cooperative behavior, children who have spent several months in a U.S. day care center would be expected to show more cooperative and less competitive behavior than non-day care children when placed in a situation where reward can be obtained only by taking turns. If the "group" orientation is a critical variable influencing cooperation, the child in a day care center would be expected to show more cooperative behavior than the child in a family day care home. Like the day care center child, the family day care child must spend much of his day in the care of someone other than his mother. Usually there are other children in the same home, but typically only 1-5 others as compared with 30-100 others in a day care center. Because of the smaller number of children in the day care home, generally there is less emphasis on group participation (see description of care mode characteristics, Chapter 3).

Method

Subjects. The Marble Game was played by pairs of children. The pairs were formed by allowing the project participants (designed Child A) to choose someone with whom he would like to play a game. He could choose anyone he liked with the restriction that the partner (Child B) also be four years old and in the same care category. A total of 100 pairs were formed, 41 GDC, 25 FDC, and 34 PC pairs. The inequality of number of pairs in each care group was the result of greater availability of a partner in the centers than in the home situation. Neighborhood friends of the PC children often did not meet the age and care mode criteria.

The greatest difficulty in creating pairs that met both the age and care criteria was found in the FDC group, however. Frequently when there was another four year old, it was the day care mother's own child, and consequently the child failed to meet the care mode criterion.

Pairing each child with a self-selected friend allowed for assessment of established cooperation-competition patterns. Since the subjects did not always choose a same sex partner (partly because of availability constraints), several cross-sex pairs were formed. Of the 100 pairs of children in the present study, 15 combinations were male-female, 24 were female-male, 35 were male-male, and 26 were female-female (where the first named sex was the sex of the "chooser").

Task. The apparatus and procedure for the Marble Game were adapted from Madsen (1971). The game board shown in Figure 16 was placed on top of a small table and a child was seated at each end (Child A and Child B). A wooden block could be moved from the middle to either end by means of strings attached to the sides of the block. The strings ran through eyelets on each end of the block and fell within convenient reach of each subject. The block had a round indentation in the center which held one marble. The block consisted of two separate pieces which were magnetically connected. If both strings were pulled simultaneously the block would split apart and the marble would roll down the incline into one of the side pockets. The half of the block facing Child A was painted a bright green and the half facing Child B white. Corresponding colors were used on a scoreboard. The scoreboard was an oblong board with two rows of marble holes. Child A's row was green and Child B's row white.

The pair of subjects was told that the purpose of the game was to

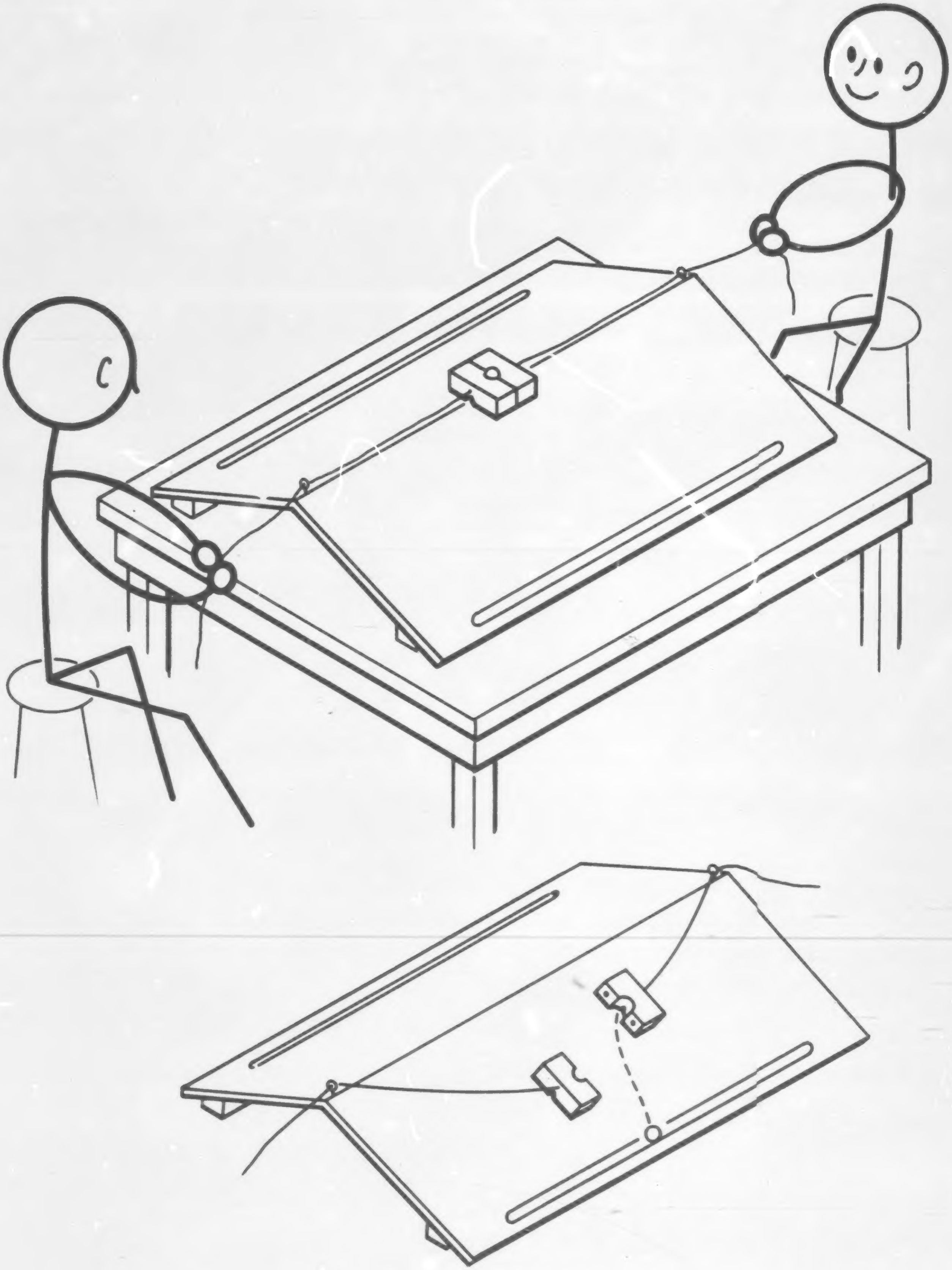

Figure 16. Marble Game board used for assessment of cooperation.

win marbles. Each pair was given pre-game practice at each step of the experimenter's verbal description of the game. The subjects were shown that Child A could win a marble by pulling the block from its center resting position to the eyelet on his side of the board. The "won marble" was transferred from the block to the green side of the scoreboard. The subjects were shown that Child B could win a marble in the same manner. His "won marble" was transferred from the block to the white side of the scoreboard. Both subjects were then instructed to pull the strings simultaneously to see what would happen. The marble rolled into one of the side slots. The experimenter explained that the marble in the slot had to stay there. She pointed out that neither child won a marble when the block broke apart.

Before actual play began, the experimenter reiterated that the purpose of the game was to win marbles and added that whoever won the most marbles would win the six pieces of candy in her hand. She demonstrated what the socreboard might look like if Child A won the most marbles and also what it might look like if Child B won the most. Finally she showed them what the scoreboard would look like if they both won the same number of marbles. She explained that if they tied, they would each get 3 pieces of candy. The subjects were cautioned that if all the marbles fell into the slots, no one would win any candy.

The subjects were told that there were 10 marbles so they could play 10 times. To start play on each trial, the block was positioned in the middle of the board and the marble placed in the holder by the experimenter while she called out what number marble it was. If a marble was won, the experimenter held out the scoreboard and the child placed the winning marble in an appropriate hole. The scoreboard was used so that each child would know his status in the game after every trial - whether he was winning, losing, or even - without having to depend on his memory.

Play was stopped after four trials. If the children had not cooperated on any of the first four trials, the experimenter asked each of the subjects to tell how they could win marbles. If the pair had cooperated, the experimenter simply said, "Good, you're winning marbles". Play was again stopped after six trials. If still no cooperation had occurred, the experimenter suggested that the children might be able to win marbles if they tried taking turns. If the pair had cooperated during the first six trials, the experimenter remarked, "Good, you're taking turns". This instruction was used in part to allow for distinction between children who might not have realized how to win marbles despite the original instructions, and children who were simply uncooperative. At the conclusion of the 10 trials the number of marbles was counted up for each child and the winning child was awarded the candy.

Scoring. The experimenter recorded who won the marble on each trial, Child A, Child B, or no one. Two scores were derived from that information: (1) the number of marbles won per trial block, and (2) a reciprocation score per trial block. The first measure reflects the number of marbles won in blocks of two trials irrespective of who won the marbles. That is, the same child could have won them all, or the two children may have taken turns. This measure has been used in previous treatments of data from the Marble Game (Madsen, 1971). The reciprocation measure reflects the extent to which pairs of children were taking turns reciprocatively. A score of 0 was assigned in a trial block if neither child won a marble, or one child won both marbles. A score of 1 was assigned if one marble was won in a trial block and the first marble in the next block was won by the other child. A score of 2 was assigned if each child won a marble within a trial block.

Reliability. To determine whether the behavior observed during the first pairing of children on the Marble Game was representative of their cooperative behavior with other friends, a subsample of 34 pairs of children played the Marble Game twice, each time with a different partner. All the children in this subsample were in full-time group day care.

An analysis of variance for pairing (first, second) and trial block (1,2,3,4,5) revealed no significant pairing main effect or interaction with trial block on reciprocation scores ($F = 1.77$, $df = 1/32$ and $F = .31$, $df = 4/128$). The absence of a pairing effect indicated that children's cooperative behavior was little altered by the particular partner with whom they were paired.

Results

The mean number of marbles won and the mean number of reciprocations is presented in Table 69 for each care group. A 3 X 5 analysis of variance for care group and trials indicated that there were no care group differences for either the number of marbles won or the number of reciprocations measured, ($Fs < 1$). A significant trial block effect was found with both measures, ($F = 9.84$, $df = 4/388$, $p < .001$ and $F = 9.52$, $df = 4/388$, $p < .001$). Cooperative resonding peaked during the trial block immediately following the experimenter's suggestion that the pair might win marbles if they tried taking turns. The effect was short-lived,

TABLE 69

Mean number of marbles won and mean number of reciprocations for each care group over five trial blocks

	Care Group			
	GDC	FDC	PC	Combined
Number marbles won				
Tr. 1-2	1.02	1.28	1.12	1.12
3-4	1.20	1.24	1.21	1.21
5-6[a]	1.10	1.44	1.47	1.31
7-8	1.49	1.76	1.62	1.60
9-10	1.37	1.44	1.44	1.41
Reciprocations				
Tr. 1-2	0.85	0.92	1.00	0.92
3-4	0.95	1.00	1.09	1.01
5-6[a]	0.95	1.28	1.44	1.20
7-8	1.39	1.40	1.56	1.45
9-10	1.17	1.12	1.24	1.18

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[a] Suggestion was given after Trial 6 to try taking turns if pair had not cooperated on first three trial blocks; pair praised if had been cooperating.

however. Mean reciprocations were at the same level by the last trial block that they had been before the instruction to take turns. The decrease in reciprocations during the last trial block may reflect, in part, the pairs who cooperated reciprocatively until the last trial, when one child apparently decided he did not want things to come out quite even. By pulling out of turn just one time he won the candy. As would be expected, the partner in such cases was generally quite upset by this devious tactic.

From Table 70 it can be seen that only 7-12% of the subjects cooperated for the first time after the instruction to try taking turns. Of the 25 pairs who had not cooperated at all on the first six trials, 11 of the pairs cooperated reciprocatively at least once after the instruction. The remaining 14 pairs never cooperated. A few of the pairs who never cooperated reciprocatively did win an occasional marble, but displayed either fierce rivalry or simple pleasure in seeing the block break apart. Rivalry was suggested when one member of a pair behaved as if he would rather not win any marbles than let his partner win even one. The pleasure pattern was found with a few younger pairs. They would laugh with great glee when the block split and had no apparent interest in playing the game as described by the experimenter.

In the Madsen study (1971) using the same mable game, only same-sex pairs were allowed to play together. No sex difference was found. In the present study Child A was allowed to pick a friend (in the same care mode) with whom to play the marble game. Partly as a result of allowing choice and partly due to availability constraints, some pairs were same-sex and some were cross-sex. Sex combination was found to interact with

TABLE 70

Percentage of pairs in each care group cooperating perfectly as measured by number of marbles won and number of reciprocations

Measure	Score	Care Mode		
		GDC	FDC	PC
Marbles Won[a]				
Cooperation - all trials	10	19.5	20.5	32.0
Cooperation - no trials	0	9.8	0.0	5.9
Cooperation - tr. 1-6	6	24.4	32.0	38.2
Cooperation - tr. 7-10	4	46.3	48.0	52.9
Cooperation only after instruction	2-4	9.8	12.0	5.8
Reciprocations[b]				
Cooperation - all trials	10	17.1	20.0	29.4
Cooperation - no trials	0	17.1	20.0	14.7
Cooperation - tr. 1-6	6	22.0	23.0	35.3
Cooperation - tr. 7-10	4	46.3	48.0	52.9
Cooperation only after instruction[c]	2-4	12.2	8.0	5.8

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[a] Cooperation = marble won each trial (by one or both Ss)

[b] Cooperation = marble won each trial block by each S

[c] First instance(s) of taking turns occurred following suggestion by E to try "taking turns", given after Trial 6

care group ($F = 3.52$, $df = 2/94$, $p < .05$) as assessed by a 3 X 2 analysis of variance on reciprocation scores. The mean reciprocation score as a function of care group and sex combination is presented in Figure 17. One-way analyses of variance for each group separately revealed that FDC cross-sex pairs tended to cooperate better than same-sex pairs ($F = 3.91$, $df = 1/23$, $p < .06$), while PC cross-sex pairs were somewhat less cooperative than same-sex pairs ($F = 2.44$, $df = 1/32$, $p < .12$). The same-cross sex comparison did not approach significance within GDC ($F < 1$).

Contrary to what one might expect, children in a day care setting were not found to be more cooperative than children with no group care experience. If anything, GDC pairs tended to be somewhat more competitive than FDC cross-sex and PC same-sex pairs. Only 17.1% of the GDC pairs cooperated reciprocatively on all trials in contrast to 29.4% of the PC pairs. Less than a quarter (22%) of the GDC pairs cooperated on all six trials before instruction in comparison to a third of the PC pairs (35.3%). In general, the results suggest that unlike kibbutz life, the day care center experience does not facilitate the learning of cooperative behavior. The failure to obtain an overall care group difference suggests that group experience *per se* will not necessarily lead to cooperative interaction even among self-formed pairs. The value placed on private property, individual excellence, and assertiveness in the United States apparently is as strong in the center as in the home.

Helping and Sharing

A second task was designed to assess the effects of care experience on performance in a situation which can be successfully met only if the

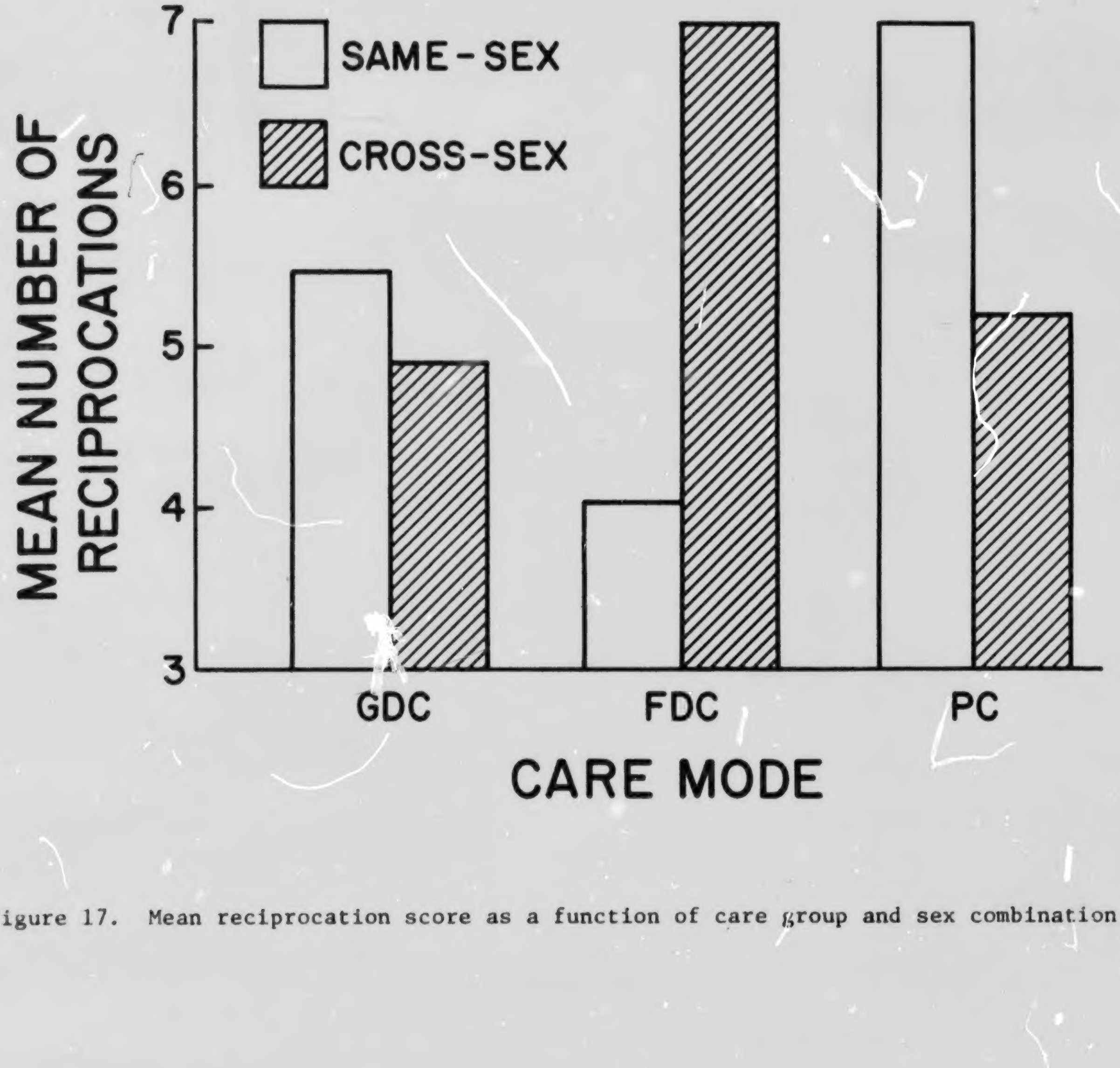

Figure 17. Mean reciprocation score as a function of care group and sex combination.

partner helps the subject. Unlike the marble game, non-cooperation cannot be interpreted as competitiveness in this task. A surprise is placed in a box which can only be opened by two children working together. One child has been told that he can remove the surprise if the box is opened. There is no reward for non-cooperation and no promise of reward to the partner for cooperation.

Using such a task, Kagan and Madsen (1972) found no differences between Anglo-American urban children and Mexican rural children in helping behavior as measured by time to open the box. American boys were found to open the box faster than girls, probably reflecting a difference in mechanical skill.

The effects of care experience on sharing behavior were also assessed. Immediately upon opening the box, a five-piece package of gum was discovered. The subject was instructed that he could decide what to do with the gum. In this particular situation, it could be argued that since both children worked together to get the box open, half of the gum rightfully belonged to the partner. Sharing half of the gum would be an equitable solution, not generous or altruistic.

Most studies have assessed sharing with tasks requiring a truly altruistic response--giving for the sake of giving (cf., Bryan & London, 1970). Generally, these have reported that preschool children are selfish compared with older children and rarely share equally (Ugurel-Semin, 1952; Handlon and Gross, 1959). No sex differences in altruism have been found in most studies with preschool children (Fischer, 1963; Handlon and Gross, 1959; Ugurel-Semin, 1952).

As with the Marble Game, it was expected that group care experience would tend to foster the development of cooperative behavior. It was expected that GDC children would show more organized, efficient box-opening behavior than FDC and PC children. In addition, it was expected that GDC children would tend to be more equitable in sharing the gum. The center child has daily experience at meal and snack time with receiving equal apportionment of goodies. Also most centers place considerable emphasis on equal access to and time with toys and equipment.

Method

Subjects. The subjects were the same 200 children who participated in the Marble Game task.

Task. The apparatus and procedure were adapted from Kagan and Madsen (1972). The materials were the training box (18 centimeters square) and the surprise box (68 x 18 x 23 centimeters) shown in Figure 18. Both had hinged lids which could only be opened if the knob(s) and handle were simultaneously pulled. Since four hands were required to open the larger box, the cooperation of two children was necessary.

The pretraining box was used to give each child experience in operating latches and handles before being confronted with the second, more complex box. The experimenter placed the training box on the table in front of the two subjects and instructed them to watch closely as she opened the box. Each child then practiced until he could open the box easily.

Following pretraining with the small box, the closed surprise box was placed on the table and the pair was informed that there was a surprise in the box. Child A was told that he could take the surprise out when the box was opened. The surprise was one package of sugarless gum. The gum

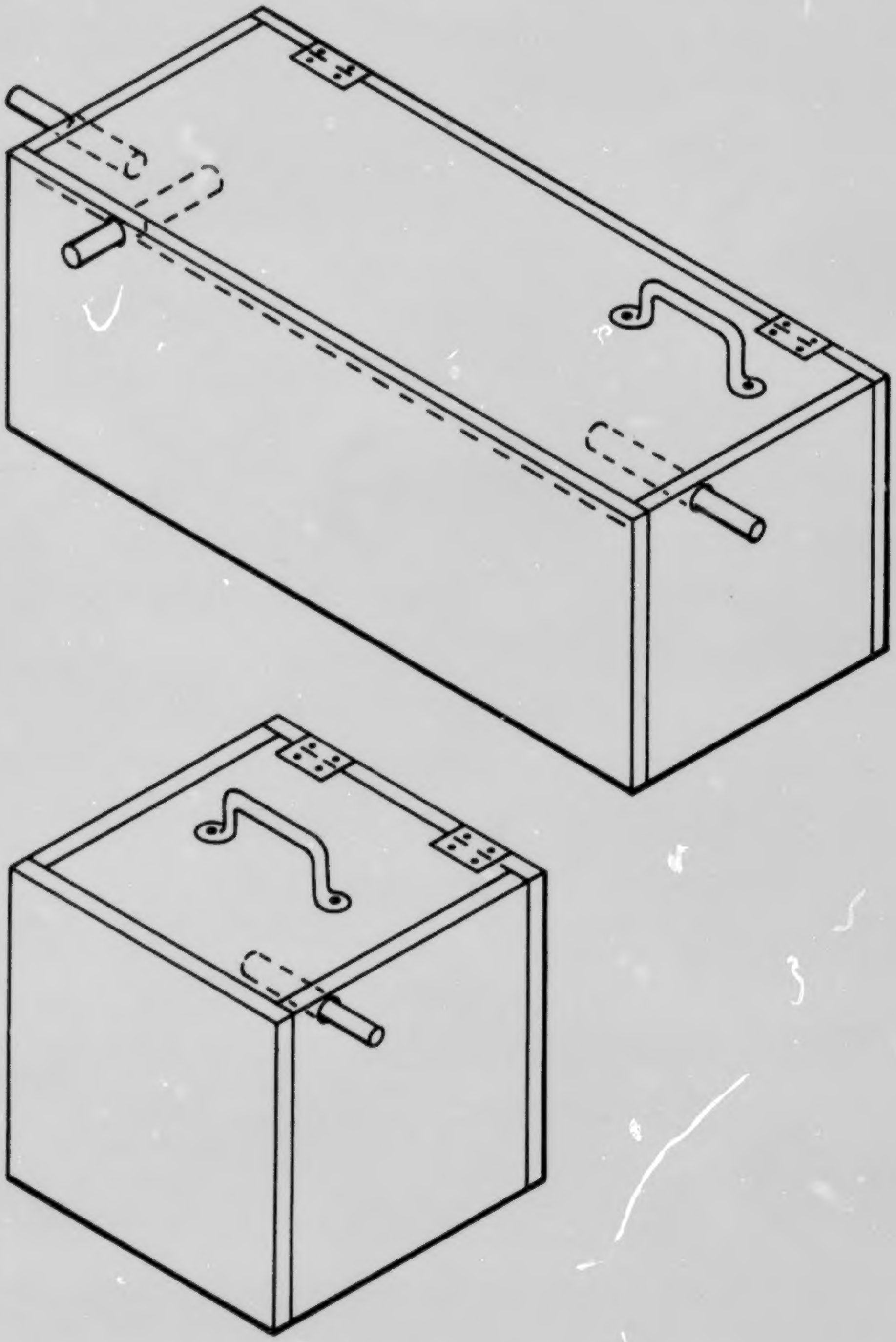

Figure 18. Surprise box (top) and training box (bottom) used for assessment of helping and sharing behavior.

could be obtained only if Child B's help was obtained.

Time to open the box was measured. If the children failed to open the box within two minutes, the experimenter coached the pair verbally until the box was successfully opened. It should be noted that in all cases, Child B's help already had been obtained prior to the experimenter's intervention.

Immediately after the box was opened by the pair, Child A was instructed to remove the gum, unwrap it and lay the pieces out so he could see how many there were. While Child A was carrying out this instruction, the experimenter asked him for a sharing - no sharing decision by saying, "Since you and Child B got the box open together, what do you think you should do with the gum?" After one minute had elapsed, the number of gums shared was recorded. A package containing five pieces of gum was used in order to force Child A to choose among the following alternatives: Inequity in his own favor, inequity in favor of his partner, or equality (achieved by splitting one piece in half or by giving the odd piece to the experimenter).

After the testing session the experimenter rated each member of the pair on several aspects of his behavior during box opening: Effortfulness of responding, resourcefulness of each member of the pair, and relative amount of attention to the experimenter and partner.

Results

Helping. Although the subjects were told that there was only one surprise and that Child A could remove it from the box, all partners (Child B) helped open the box with little or no persuasion needed from Child A. Nearly all partners worked as diligently as the subjects. Some pairs were more successful than others, however, despite pretraining. Time to open the box ranged from a low of 8 seconds to a maximum of 120 seconds, at which time the experimenter coached the pair. Although the variance for the three groups was not heterogeneous, the distribution of scores was definitely non-normal with 44% of the subjects opening the box within 60 seconds, 11.3% between 61-119 seconds, and 44% of the subjects failing to open the box within 120 seconds. Because of the non-normality, the data were not submitted to analysis of variance to assess care group effects as had been planned. Instead pairs were categorized as fast openers (0-60 seconds), slow openers (61-119 seconds), and non-openers (120 seconds). The percentage of pairs in each category is presented in Table 71 separately for each care group. The relationship between care group and category was assessed by chi square. Contrary to expectations, care group was not found to be related to time to open the box ($X^2 = 3.05$, df = 4). The results suggest that the group care situation which gives daily experience in playing and working with many other children, is not any more effective in fostering helping behavior than is playing with the child next door. Not only were GDC children no more effective in opening the box, but they also were not found to differ from FDC or PC children in their manner of solving the problem. Chi square analyses revealed no relationship between care group and effortfulness of response, resourcefulness of the pair, or the amount of attention to the experimenter versus the child. Many pairs, irrespective of care group, failed to engage in useful, task-oriented communication. Verbalizations were often whiney solicitations for help from the experimenter or accusations that the partner was not trying hard enough.

TABLE 71

Percentage of children in each care group requiring up to one, two, or more than two minutes to open the Surprise Box

Time to Open Box[a] (in seconds)	Care Group		
	GDC	FDC	PC
0 - 60	44.7	40.0	47.1
61 - 119	15.8	4.0	11.8
120+	39.5	56.0	41.2

[a] Mean time = 73.24 (GDC); 82.40 (FDC); 72.97 (PC)

Sharing. Both members of a pair worked together to get the box open, but once opened, Child A removed the gum and was responsible for making a decision as to what to do with it. Although 83% of the subjects did share at least one piece of gum, only 22% displayed equitable or generous behavior. As can be seen in Table 72, most of the subjects, irrespective of care group, gave only a token share to the partner. Once the gum was in hand, Child A apparently lost sight of the fact that it was only because of Child B's help that he had been able to obtain the gum. Child A generally behaved as if he believed that he "owned" the gum because he had removed it from the box.

The mean number of gums shared by male and female "givers" is presented in Table 73 for each care group. Because the number of pairs per cell was too small for a three-way analysis of variance for care group, sex of giver, and sex of partner, two 3 X 2 analyses were performed, one to assess the interaction between group and sex combination and one to assess the interaction between group and sex of giver. The first analysis revealed that care group and sex combination were not significant factors ($\underline{F}$s < 1), nor was the interaction significant ($\underline{F} = 1.64$, $\underline{df} = 2/94$, $\underline{p} < .25$). The second analysis revealed that sex of giver was a significant factor ($\underline{F} = 4.21$, $\underline{df} = 1/94$, $\underline{p} < .05$). Females gave more pieces to partners than did males. The Care Group X Sex of Giver interaction was not significant ($\underline{F} < 1$). The sex difference in sharing is consistent with results reported by Grusec and Skubiski (1970) and White (1967) with elementary children and by Dreman and Greenbaum (1973) with preschool children but inconsistent with the absence of sex differences in other studies using preschool subjects (e.g. Fischer, 1963; Handlon & Gross,

TABLE 72

Percentage of children in each care group who were selfish, equalitarian, and generous with jointly acquired gum

Classification	Number Pieces Shared	Care Mode GDC	FDC	PC
Selfish	0	12.20	12.00	14.71
Token	1	29.27	32.00	38.24
Token	2	41.46	32.00	20.59
Equalitarian	2½	7.32	8.00	11.76
Generous	3-5	9.76	16.00	14.71

TABLE 73

Mean number of pieces of gum shared by male and female "givers" in each care group

Sex of Giver	Care Group GDC	 FDC	 PC	Combined
Male	1.48	1.38	1.21	1.38
Female	1.67	2.17	1.65	1.78

1959; Staub, 1968; and Ugurel-Semin, 1952).

Since Child A's generosity was tested in the presence of the partner, it was inevitable that pressure would be applied by some of the partners. About half (53.1%) of the partners did ask for a share or request more than they had initially been given. A care group difference was found in the number of partners asking for a share ($X^2 = 6.14$, df = 2, p < .05). Two-thirds (67.6%) of the GDC partners requested a share but only 38.2% of the [illegible]C partners asked. About half (52%) of the FDC partners made a request. Despite the fact that many subjects were asked nicely, pleaded with, cajoled, or "robbed" (in the latter case the experimenter returned the gum to Child A and reiterated that Child A must decide what to do with the gum), there was no relationship between the number of gums shared and partner request ($X^2 = 1.68$, df = 3).

The results suggest that even under conditions which should maximize sharing (surveillance, recipient known and present, reward obtained together) most children were not equalitarian. Most children gave up only one or two of the five pieces of gum. Such behavior has been found to be typical of preschool age children by other investigators (Handlon & Gross, 1959; Ugurel-Semin, 1952). It had been expected, however, that the intensive training and peer exposure provided in the day care center might tend to facilitate the development of a sense of responsibility to make a fair distribution of resources.

The results of the two experiments failed to confirm the expectation that daily group play and work experience would foster the development of cooperation, helping, and sharing in the preschool age child. Children in family day care homes and children who never had been in day care were found to behave remarkably similarly to children in GDC on most tasks. In contrast to the dramatic differences between kibbutz and non-kibbutz Israeli children reported by Shapira and Madsen (1974), the absence of effects due to the care experience in the United States suggests (1) that the group living experience per se does not foster cooperation and (2) that similar cultural values, models, and contingencies are operating the day care center, the day care home, and the individual family with respect to cooperation and sharing. The great variability on some of the measures indicated that there was considerable diversity in the behavior of the pairs and probably equal diversity in the values transmitted to the children. The diversity was approximately equal in all care groups and greater between children than between care group. The absence of effects should be reassuring for the non-working mother who is concerned that her child may not learn to "get along" with other children because he has not had an organized peer-group experience. Apparently playing with neighborhood children is equally effective (or ineffective) in fostering cooperation and sharing. It should be kept in mind, however, that most results were based on group means, and do not preclude the possibility that the day care experience might effect an increase or decrease in the prosocial behavior of individual children.

CHAPTER 14

CONCLUSIONS AND IMPLICATIONS

The goal of this project was to provide a basis for characterization of some of the differences in social-emotional development of children with day care center, family day care, or home experience. It was assumed that the differences in the social learning environments in the three settings would result in different outcome behaviors. We found no supportive evidence for most of the 11 assumptions about the impact of day care experiences on child behavior listed in Chapter 1. Although no claim can be made to have obtained valid measures of all the aspects of development studied, the overwhelming similarity of the four year olds in the three settings on most task measures and by our subjective evaluation, would suggest that we need to re-evaluate some of our unbased "cliches" about the influence of day care on development.

For example, it is commonly held that day care experience, especially center experience, will foster cooperative play patterns. It was found, however, that a subgroup of home-reared and of family day care children were the most cooperative on the Marble Game, not the center children. Competitiveness is valued in American culture and may be unknowingly stressed in the "school" environment of the center to a greater degree than previously assumed. Teachers were often overheard making comparative judgments about the accomplishments and characteristics of children.

No support was also found for the related assumption that center children are more peer oriented than home-reared children. No difference between the three care groups was found in the frequency of children mentioning peers or the number of peers mentioned in response to hypothetical stories about six everyday situations. Contrary to what one would expect, the day care children who had been in day care for three to five years made fewer mentions of peers than other children. We found that home-reared children talked as enthusiastically about their experiences with neighborhood children as center children did about their day care peers.

The observation by Lay and Meyer (1972) that children who entered a center as infants were more peer oriented than children who entered later seems contradictory to the results of the present study. They were, however, comparing peer interaction among a group of familiar early-entry children with peer interaction of a group of late-entry children who had no previous acquaintance with the center children. Certainly one would expect that a higher frequency of interaction would be observed among long standing friends than among newly acquainted children. The infrequent mention of neighborhood children by day care children in the present study would suggest that if we observed peer interaction in a neighborhood rather than center setting, we would undoubtedly observe an opposite pattern to that found by Lay and Meyer. The home-reared children in the neighborhood environment would be observed to engage in more peer interaction than center children. On the basis of both our task measures and our subjective evaluation, we found no evidence that center children were more peer oriented than home-reared children. Contrary to what one might expect, we would guess that there were as many lonely children in center settings as in home settings. Some center children were observed to be unable to interact freely because of unusual shyness or because of the presence of traits judged as undesirable by the other children.

There is perhaps more concern over the influence of day care on emotional security than any other aspect of child development. Some fear that separation from the mother, particularly during infancy, will result in long-term emotional security. That is, separation will weaken the mother-child attachment. Others fear that the strength of substitute attachments to peers and caretaker will supplant the mother-child attachment. Little evidence to support these fears was found. Some differences were detected, however, in the response of children to the family day care and center experience. Family day care experience was found to be associated with a higher frequency of children with a high curiosity profile and with fewer children mentioning parents as responses to hypothetical situations, while the center and home-reared children were not found to differ. The family day care children, however, did not differ from center or home children in the frequency of mention of peers or non-family adults. The results suggest that for some children, family day care experience provides the emotional support and opportunity for development of less hesitancy about approaching a new situation and somewhat less dependence on parents.

Interestingly, children who entered a center situation late (three to four years of age) were found to be the most parent oriented of all groups. Late entry, directly into a center, may tend to intensify the child's attachment to the parents for a period, that is, lead to defensive attachment for some children. Since late-entry family day care children did not differ from home-reared children in the number of highly parent-oriented children (while twice as many late-entry center children showed evidence of high parent orientation), the ability of the center to provide adequate support for some older children (those who were at home for the first three years) might be questioned. The higher staff-child ratios typically provided for older children in centers may not offer sufficient opportunity to develop a satisfactory relationship with the caretaker for some children. We emphasize some since many children appeared to make the transition without evidence of defensive attachment. A few months in a family day care home before entering the center or perhaps a combination of half-day in a "school" setting and half days with a babysitter in the home or with a day care mother might reduce these children's need to focus on the parent and lead to a healthy independence.

It was noted above that more high curiosity children were found among family day care subjects than the other groups, in part, confirming the common assumption that day care children exhibit less anxiety in a new situation and more readily seek to contact the new environment than do home-reared children. Home-reared children were, however, not found to differ from center children in approach behavior or in preferred novelty of toys. The findings suggest that day care experience per se does not lead to increased tendency to approach a novel environment. Day care in a family setting may more nearly provide the optimal combination of security and novelty to foster curiosity than either the center or home.

A corollary to the assumption that maternal separation will lead to insecurity and emotional disturbance is the assumption that absence of maternal support leads to the development of a negative self image. During the early years when a child is forming an impression of "self", one might well expect that the amount and context of feedback provided will markedly influence the child's perception of his body and his abilities. Prescott and Jones (1971) have expressed some concern that the center experience may not provide opportunities for the child to explore his own capabilities independently. At the same time they note the possibility that the center teacher may not be able to provide the positive feedback for small accomplishments that might lead to a positive self-evaluation. With several children all demanding attention it is difficult for even the most sensitive teacher to note a small accomplishment or to remember to make a comment about the appearance of the average looking as well as the especially attractive children. Based on both articulation of the self-drawings and self-ratings on several dimensions, no evidence of a negative influence of day care on self-concept was found. No care group differences were found. There was considerable variability in the self-ratings of the children indicating that not all the four year olds were maintaining that they were "best", but the distribution of scores was apparently very similar across groups. Particularly interesting was the absence of a difference between day care and home-reared children in their self-ratings of maternal love. Day care children gave no indication that they perceived their mothers as less accepting than did the home-reared children. It could be argued that day care children responded defensively, but based on muscular and facial cues, we found no greater evidence of defensive responding among day care than among home children.

Related to self concept were several tasks assessing sex role preference and adoption. Although some evidence was found that the activities available and approved by teacher may be different from those available to home and family day care children, no evidence was found that boys become "feminized" in their activity preferences in the center setting. No difference was found among boys in masculinity of preferred toys or in masculinity of occupational preferences. Contrary to what one might expect, day care girls were found to be somewhat more stereotyped in toy preferences than were home-reared girls. Apparently reinforcement by teachers and peers for feminine preferences in the day care setting led to increased sex-appropriate toy preference. There was no care group difference among either boys or girls in the number of children giving occupational choices in response to a question about what they want to be when grown up. There was also no difference in the diversity of choices offered. The absence of a difference among girls was somewhat unexpected based on literature dealing with the influence of maternal employment on girls' attitude toward working and their aspiration. These studies, however, were based on much older subjects (cf., Hoffman, 1974). In the present study, half as many girls (day care and non-day care) as boys mentioned even one occupational choice indicating that sex related vocational education was taking place as early as four. Education was not related to care group, however, only to sex.

Two aspects of behavior which are frequently assumed to be promoted in the day care center setting are impulse control and achievement motivation. By early exposure to the "school model" it is assumed that children will learn to respond in a controlled manner, when and how they are instructed, and will also develop interest as well as capability in achievement-oriented tasks, particularly preacademic ones. Again contrary to expectation, family day care children, not children with center experience, were found to be more likely to choose delay of gratification when given a choice between an immediately available small candy and a delayed larger candy. Although more girls in day care than at home delayed, the care experience effect was primarily among boys, with few center boys choosing to delay. Years in day care was not found to be related to delay behavior.

Performance on the two motor impulse control tasks was found to be unrelated to day care experience except for a trend toward decreased impulse control among girls who had been in day care for over two years. Apparently neither formal preacademic training nor the daily experience with waiting until all children are served at lunch, dressed for play, reading for a story, etc., in the center setting improved ability to control motor responding.

Some evidence was found indicating that day care children were somewhat more realistic predictors of their abilities on both a physical and an academic task. This difference, however, was manifest only on the initial trial on each task. The home-reared children quickly adjusted the level of task difficulty selected to more realistic levels. That day care children tended to select an easier level of difficulty could be interpreted as indicative of a greater fear of failure or as indicative of more accurate perception of their capabilities. The fact that home children modified their selection of task difficulty to more realistic levels after the first attempt would seem to be more consistent with the latter interpretation.

In general, the results of the project taken as a whole suggest that the day care experience does not result in markedly different outcomes than the home experience. Some trends were observed, however. Family day care experience may tend to foster curiosity and independence, while late entry in a center may lead to increased parent orientation, perhaps indicative of defensive attachment, among some children. Home-rearing may allow girls somewhat more freedom to express interest in opposite sex toys and activities than day care experience. Family day care experience may tend to foster delay of gratification, the ability to wait for a more valued reward, but center experience may decrease that ability among boys. Long-term day care experience may not result in normally found improvement in ability to control rate of motor responding among girls (and by implication a reflective manner of responding). Day care experience, may however, decrease the tendency for children to overestimate their abilities in selecting task difficulty on both physical and academic tasks. All of these generalizations are couched in subjective language to remind the reader that these results reflect differences between groups of children. The conclusion that day care similarly influences the outcome for all children is unwarranted. Marked variability characterized most of the measures suggesting that not all children responded the same to similar care experiences and also that specific care settings within a category differed markedly in some cases.

Directions for Further Research

Further research should be focused on day care and family characteristics associated with the patterns of development which were found to differ. For example, one question that might be explored is whether center size, teacher sensitivity, or center philosophy are related to the degree of parent orientation among late-entry center children. Similarly, the characteristics of family day care mothers and settings associated with enhanced curiosity and independence should be explored. Some attempt to study these questions will be made based on the center and day care home data collected as part of the present project. The results of those analyses will be made available in a supplemental report.

Perhaps the most fruitful direction for further study is to attempt to obtain information about the response of children with different care experience in a variety of situations. It is important, however, that the situations be novel for all groups in order to allow for valid comparison of response. Of interest would be observation of children's initial emotional response and subsequent adjustment to a high stress situation, particularly one requiring an operant response to terminate the stress condition. It would also be informative to observe the children's emotional response and social-interaction during the first week of kindergarten and the following year on a monthly basis. The kindergarten setting--teacher, children and room--would be new for all children. Especially in light of having obtained no evidence for increased peer orientation among day care children, it would be informative to focus attention on the children's ease of development of peer relations and to assess the quality of the peer interaction. In light of evidence that early experience in at least some center settings (Schwarz, Strickland, & Krolick, 1972) leads to a poorer cooperation with adults, observation of teacher response to children with center, family day care, and only home experience as well as child response to the teacher would provide some feedback as to whether the center setting prepares children for the typical public school setting.

It is only as we come to a greater understanding of the relationship between specific characteristics of care settings and behavioral outcomes that we will have a basis for decision making as parents, center directors, day care mothers, counsellors, or consultants. We can only make assumptions based on indirect evidence or common sense without more focused study. Ultimately we should be concerned with the interrelationship between child characteristics, family variables, and the characteristics of the care setting in our attempt to understand the relationship between care experience and social-emotional development.

PART IV

APPENDICES

APPENDIX A

CENTER INFORMATION FORM
AND SUMMARY

1. **Staffing**: List by classification and give number of staff in each classification; do not put staff member names but simply the number of people fulfilling each type of job.

2. Number of Children ____________ (total)

Part-time ________ (less than 6 hours daily)
Full-time ________ (6+ hours daily)

3. Ages of Children (Indicate number at each level)

0 - 1 year _____
1 - 2 years _____
2 - 3 years _____
3 - 4 years _____
4 - 5 years _____
5+ years _____

4. Racial Composition (Indicate number of each)

White _____
Black _____
Oriental _____
American Indian _____
Mexican American _____
Other _____

5. What hours is the school open? _____ a.m. to _____ p.m.

6. How do you have the children grouped? (age, ability, etc. -- what criteria used)

CENTER INFORMATION FORM (Cont'd.)

7. Give approximate percentage of time 4 year olds spend in each of the following: (not including sleeping, snack or lunch time)

	% Time
Free Play	
Indoor	
Outdoor	
Teacher directed play (games, physical skill activities, role playing, etc.)	
Lessons, projects, or goal-directed learning experiences	
Teacher planned-compulsory (everyone in her group participates)	
Teacher planned non-compulsory (activity made available; children choose to participate or not)	
Other (please specify)	
TOTAL	100%

8. How do you handle lunch, naps, and outdoor play? Does every child have to sit down for lunch, take naps, go out for outdoor play; or are these decisions made on an individual basis? Why?

9. Is there anything you consider unique or unusual about this school, such as facilities, program, training, or type of children?

10. What do you hope the children will get out of their experiences here?

11. What do you see as your most important job in supervising children?

12. How do you feel about a teacher's holding children or hugging them or showing affection?

CENTER INFORMATION FORM (Cont'd.)

13. How do you handle it when a child sticks close and demands attention?

14. In general, how important do you think it is for children to obey?

Why do you feel this way?

15. Sometimes a child will get angry at his mother or teacher and hit or kick her or shout angry things at her. How much of this sort of thing do you think adults ought to allow in a 4 year old child?

CENTER INFORMATION SUMMARY

(N = 18 centers; frequency in parentheses)

No. of teachers:

(0)	1
(1)	2
(1)	3
(1)	4
(0)	5
(10)	6 or more
(5)	No response

No. of part-time children:

(7)	0-10
(5)	11-20
(6)	20 or more

No. of full-time children:

(2)	10-20
(3)	20-30
(3)	30-40
(5)	40-50
(3)	50-60
(1)	60-70
(1)	70-80

No. of centers with children under 2 years old

(4)

No. of children 2-5 years old counting full- and part-time children

(0)	10-20
(2)	20-30
(4)	30-40
(6)	40-50
(1)	50-60
(1)	60-70
(1)	70-80
(3)	No response

No. of children 5 years old and over

(0)	0
(9)	1-10
(9)	10 or more

CENTER INFORMATION SUMMARY (Cont'd.)

No. of non-caucasian children

(2) 0
(11) 1-10
(2) 10 or more
(3) No response

Percent of day spent in indoor freeplay

(7) 0-25
(10) 25-50
(1) 50-75

Percent of day spent in outdoor freeplay

(13) 0-25
(5) 25-50

Percent of day spent in teacher-directed play

(15) 0-25
(3) 25-50

Percent of day spent in teacher-planned compulsory lessons

(17) 0-25
(1) 25-50

Percent of day spent in teacher-planned non-compulsory lessons

(16) 0-25
(2) 25-50

Degree of structure

(1) Whole day is planned
(5) Lunch, naps, and all a.m. activities planned; or 1½ a.m. and one or more hours of p.m. are planned; i.e. very little free play
(12) Lunch, naps, and about 1½ hours planned. Rest of day free play
(0) Lunch, naps, and 15-30 minutes planned. Rest of day free play
(0) Only lunch and naps planned. Rest of day is free play

CENTER INFORMATION SUMMARY (Cont'd.)

Time outdoors

(0) Nearly all day
(10) Several hours
(5) About 1 hour
(3) Less than 1 hour

Grouping

(1) No grouping
(5) Strict age grouping
(10) Grouped on basis of age, motor development, social and academic skills
(2) Are grouped, but not by above criteria

Group vs Individual

(17) Group lunch
(1) Individual lunch

(15) Group nap
(3) Individual nap

(10) Group outdoor play
(3) Indoor outdoor play
(5) Both

(4) Group teaching
(4) Individual teaching
(10) Both

Affection

(0) Forces affection on children or thinks this is main activity of day
(15) Natural expression of affection when appropriate
(3) Shows some reservation about showing affection

Reaction to dependent children

(1) Punishes, ignores, or does not take dependent children
(4) Allows dependence for only a short while
(12) Allows dependence, but encourages child to develop independence at own pace
(0) Allows or enjoys dependence: no attempt made to foster independence

CENTER INFORMATION SUMMARY (Cont'd.)

Attitude toward obedience

(8) Good discipline and teaching children to obey is a primary goal
(9) Considers discipline and obedience to be moderately important; expresses some feeling that complete obedience is not always necessary
(1) Little importance is placed on obedience and discipline

Reasoning

(10) High reasoning; reasons given automatically
(7) Medium reasoning; reasons given for new rules or if child asks why
(1) Low reasoning; no reasons given, even if child asks, except in unusual circumstances

Restrictiveness

(4) Highly restrictive
(10) Medium restrictiveness
(4) Low restrictiveness

Permission of aggression toward adults

(0) Never encountered this problem
(1) Allows even extremely aggressive behavior
(12) Allows "appropriate expression of anger" but punishes physical aggression or tantrum behavior
(5) Allows almost no expression of aggression toward adults

Special points about the center

(2) No special points
(6) Special facilities
(11) Special philosophy or program ideas
(7) Special children or families
(1) Special training
(0) "I just always get along well with children"

Teachers' role

(0) Mother substitute; teacher stresses mainly affection, emotional support, and home-like atmosphere
(12) Teacher: stresses mainly pre-school activities and preparation for kindergarten and primary grades through training of academic skills and skills such as following directions and working well in a group
(14) Friend: Teacher stresses primarily a desire that child develop self esteem, is happy at day care, has plenty of things to do
(0) Babysitter: Teacher stresses mainly discipline and safety of the group

APPENDIX B

DAY CARE HOME INFORMATION INTERVIEW FORM AND SUMMARY

1. Number of Children

Part-time _____
Full-time _____
Own _____

	FDC	OWN
0 - 1 yr.	_____	_____
1 - 2	_____	_____
2 - 3	_____	_____
3 - 4	_____	_____
4 - 5	_____	_____
5 - 6	_____	_____

2. Racial Composition

	FDC	OWN
White	_____	_____
Black	_____	_____
Oriental	_____	_____
Mexican-American	_____	_____
Other	_____	_____

3. Do you attempt to group or pair the children in any special way for play or other activities? If so, on what basis?

4. What would be a typical day's activities for you and for X? (make timetable)

4a. Do you have field trips? If so, where; how often; who goes?

Circle one: YES NO

Circle one: OFTEN (monthly) OCCASIONALLY RARELY NEVER

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DAY CARE HOME INFORMATION INTERVIEW FORM (Con't.)

5. About how much time does X spend each day in undirected free play?

Indoor W_____ S_____

Outdoor W_____ S_____

6. Do you have any organized play periods for the child/children? I'm thinking of things such as games, physical skill-building activities, role-playing, etc. Things that you organize and direct for the children.

Circle one: YES NO Time/day with X in directed play _________

Examples: Circle one: GROUP INDIVIDUAL

7. Do you have any special learning times with the child/children. This would include things such as lessons, projects, or other goal-directed experiences.

Circle one: YES NO Time/day with X in learning times ________

Examples: Circle one: GROUP INDIVIDUAL

8. How do you handle lunch, naps, and outdoor play? Do all the children have to sit down for lunch whether hungry or not, take naps, go outside, etc.; OR are these decisions made on an individual basis.

Circle one: GROUP BASIS INDIVIDUAL BASIS

Examples:

9. Is there anything you consider unique or special about your day care home--such as facilities, program, your ideas or training, or the type of children?

Circle one: YES NO

What

DAY CARE HOME INFORMATION INTERVIEW FORM (Con't.)

10. What do you hope the children will get out of their experiences here? What about for X, specifically?

11. What do you see as your most important job in supervising children?

Circle one or more:
___ CONTROL
___ KEEP SAFE
___ PROMOTE PHYSICAL GROWTH
___ PROMOTE INTELLECTUAL GROWTH
___ IMPART SOCIAL SKILLS
___ PROVIDE SECURE, LOVING ENVIRONMENT
___ OTHER (specify)

12. How do you feel about a day care mother's holding children or hugging them or in other ways showing physical affection?

Circle one: APPROVE DISAPPROVE

Reasons:

13. How do you handle it when a child sticks close and demands attention?

Circle one: REINFORCE PUNISH IGNORE DISCOURAGE

Examples:

14. In general, how important do you think it is for a child to obey?

Do you think a child should be given a reason for why he can or can't do something or should be obey just because you say so?

Circle one: HI REASONING MED REASONING LO REASONING

What kinds of rules do you have about what X can and can't do?

Circle one: HI RESTRICTIVE MED RESTRICTIVE LO RESTRICTIVE

DAY CARE HOME INFORMATION INTERVIEW FORM (Con't.)

15. Sometimes a child will get angry at his mother, or teacher or day care mother and hit or kick or call her names. How much of this kind of thing do you allow?

Circle one: ALLOW DO NOT ALLOW

How handle:

16. How about when X is playing with other children and gets into an argument of a fight; how do you handle this situation?

Circle one:
___ IGNORE, LET WORK OUT SELVES
___ INTERVENE IMMEDIATELY
___ INTERVENE IF GETS DANGEROUS OR GOES ON TOO LONG

How handle, if intervene?

17. Some mothers think that there are some activities and toys that should be just for girls and some just for boys. Other mothers don't think it makes any difference what a child plays with or does. What do you think? What about for X?

Circle one: HI DIFFERENCE MED DIFFERENCE LO DIFFERENCE

18. Some day care mothers really enjoy working with kids and wouldn't want to ever give up having kids around. Others wonder if its really worth all the hassle and wouldn't do it if they didn't feel they had to. Do you enjoy being a family day care mother or do you sometimes have second thoughts?

Circle one: HI ENJOY MED ENJOY LO ENJOY

DAY CARE HOME INFORMATION SUMMARY

(Frequency in parentheses)

No. of part-time children (N = 68)

(17) 0
(18) 1
(12) 2
(8) 3
(6) 4
(5) 5
(1) 6
(1) 7

No. of full-time children (N = 68)

(1) 0
(10) 1
(16) 2
(13) 3
(8) 4
(7) 5
(8) 6
(5) 7 or more

No. of own children (N = 68)

(14) 0
(11) 1
(23) 2
(9) 3
(7) 4
(4) 5 or more

No. of homes with non-caucasian children (N = 68)

(15)

No. of homes with children under 2 years old (part-time and full-time; N = 68)

(28)

No. of children 2-5 years old (part-time and full-time; N = 68)

(5) 1
(15) 2
(19) 3
(14) 4
(5) 5
(6) 6
(4) 7 or more

DAY CARE HOME INFORMATION SUMMARY (Cont'd.)

No. of children 5 years and over (part-time and full-time; N = 68)

(5) 0
(9) 1
(17) 2
(13) 3
(24) 4 or more

Degree of structure (N = 68)

(0) Whole day is planned; almost no time allowed for free play
(8) Lunch, naps, and all a.m. activities planned; or about 1½ a.m. and 1 hour in p.m. planned; i.e. not much time for free play
(23) Lunch, naps, and about 1½ hours of planned activities; rest is free play
(26) Lunch, naps, and 15-30 minutes of planned activities; rest free play
(11) Lunch, and naps are only planned activities. Almost all day is free play

Field trips (N = 68)

(35) Field trips taken once a week or more
(13) Field trips are taken about once a month
(9) There are several field trips a year
(0) Field trips are taken only about once a year
(11) There are no field trips

(14) Field trips are special trips, e.g. fire station, beach, lake, zoo, etc.
(15) Field trips are routine trips, e.g. grocery store, neighbor's house, etc.
(28) Both
(11) There are no field trips. Children never leave the FDC home

Time outdoors (N = 67)

(17) Children go outdoors every day regardless of weather
(36) Children go out when weather is not too bad
(14) Children go out only in summer or when weather is very good

Time outdoors in good weather (N = 66)

(27) Outdoors almost all day; may even eat and sleep outdoors
(37) Outdoors for several hours
(2) Outdoors very little or not at all

DAY CARE HOME INFORMATION SUMMARY (Cont'd.)

Teaching method (N = 67)

(21) FDC mother answers questions etc., but places no emphasis on pre-academic learning
(21) FDC mother values pre-academic learning but tries to teach the children in an informal way as a parent would
(21) FDC mother has a structured learning time
(4) FDC mother is not concerned at all with teaching the children, even in an informal way

Group vs individual orientation (N = 68)

(54) Group lunch
(12) Individual lunch
(2) Both

(46) Group nap
(21) Individual nap (N = 68)
(1) Both

(21) Group outdoor play
(32) Individual outdoor play (N = 68)
(15) Both

(41) Children play all together; no grouping (N = 67)
(6) Children grouped according to age, sex, ability, or some other basis
(20) Both

(22) Teaching directed to group as a whole
(16) Teaching directed to individuals (N = 67)
(19) Both
(10) There is no teaching done

Affection (N = 66)

(4) FDC mother forces affection on the children; seems to think this is the main activity of the day
(51) FDC mother expresses affection naturally when appropriate
(10) FDC mother shows affection only to babies or only in certain circumstances as when a child is hurt or sick. Mother has reservations about FDC mothers showing affection openly to FDC children
(1) FDC mother almost never shows affection to FDC children; has definite opinion against showing affection, e.g. is afraid she will replace the mother

DAY CARE HOME INFORMATION SUMMARY (Cont'd.)

Dependent children (N = 66)

(10) FDC mother punishes, ignores or does not take dependent children
(11) FDC mother allows dependence for a short while, then forces child to play independently
(36) FDC mother allows dependence while encouraging independence; but allows child to develop independence at his own pace
(9) FDC mother allows dependent behavior and makes no attempt to foster more independent behavior in the child

Obedience (N = 66)

(33) FDC mother considers obedience to be very important and considers self to be a strict disciplinarian
(25) FDC mother considers obedience and discipline to be moderately important but allows children to "get away with" some disobedience
(8) FDC mother places little importance on obedience or discipline except in order to prevent serious injury

Reasoning (N = 66)

(29) High reasoning; reasons given automatically
(31) Medium reasoning; reasons given for new rules or if a child asks why
(6) Low reasoning; reasons seldom given, even if child asks why, except in unusual cases

Restrictiveness (N = 66)

(11) FDC mother is highly restrictive
(43) FDC mother shows medium restrictiveness
(12) FDC mother shows low restrictiveness

Permission of aggression towards adults (N = 66)

(7) FDC mother has never encountered this problem
(5) FDC mother allows even extremely aggressive behavior toward adults
(25) FDC mother allows only verbal aggression toward adults
(29) FDC mother allows almost no aggressive behavior toward adults

Aggression among children (N = 66)

(24) FDC mother intervenes immediately at any sign of aggression
(15) FDC mother intervenes after a few moments of aggression
(27) FDC mother tries to ignore aggression and let children settle the dispute for themselves; intervenes only if situation is dangerous or children are extremely upset

DAY CARE HOME INFORMATION SUMMARY (Cont'd.)

FDC mother's reaction to aggressive child (N = 66)

(31) Aggressor is punished, e.g. spanked, make to sit on a chair, sent to isolation, and/or made to apologize to other child
(23) Aggressor is talked to or lectured. This may be in conjunction with separating fighting children or taking away object being fought over, but emphasis is on explaining that the aggressive child's behavior was wrong
(12) Aggressor is not punished. FDC mother may tell fighting children to "knock it off", may remove object being fought over, may separate children or try to distract one or both of them; but there is no discussion of the aggressor's having done anything wrong

Sex-typing (N = 66)

(8) High difference, FDC mother thinks that some toys and activities are only for girls and others are only for boys
(22) Medium difference
(36) Low difference. FDC mother does not care if children play "cross-sex" activities or toys

Enjoyment of job (N = 66)

(46) FDC mother enjoys her job very much
(18) FDC mother enjoys her job moderately
(2) FDC mother does not enjoy her job very much and does it mainly/only for the extra money or so that her own children will have someone to play with

Organized activities (multiple response)

(2) No organized activities
(55) Simple arts and crafts, e.g., coloring
(25) Elaborate arts and crafts, e.g., messy and involved activities including cooking
(8) Exercises and/or calesthenics
(6) Dancing
(26) Group physical games: e.g., catch, frisbee, tag, hide and seek
(17) Music
(23) Group table games, e.g., cards, bingo, Candy Land, Lotto
(37) Being read to
(33) Organized work on colors, number, writing and other pre-academic skills

DAY CARE HOME INFORMATION SUMMARY (Cont'd.)

Special points about day care home (multiple response)

(23)	No special points
(5)	Special facilities
(24)	Special philosophy or program ideas
(9)	Special children or families
(5)	Special training
(9)	"I just always get along with children"

FDC mother's role (multiple response)

(37)	Substitute mother
(11)	Teacher
(28)	Friend or aunt
(5)	Babysitter

APPENDIX C

CENTER RATING FORM

I. Choice of Activities (Individuality vs. Group Conformity)

a. Large Motor Activities

choice

1--children given complete freedom of choice on activities at almost all times

2--

3--choice given at certain times and among certain activities

4--

no choice

5--children given no choice of activities or times but told which activity to do when; all children expected to follow the teacher-made choice

b. Program Activities or Projects

choice

1--children given freedom of choice of any activity possible at center at almost all times

2--children given freedom of choice of any activity possible at center when/if they can fine an adult to help prepare (paints, glue, etc.) and/or supervise (carpentry, cooking, dangerous activities)

3--children given freedom of choice of any activity possible at center at certain times (free play times)

4--choice at certain times from limited set of activities

no choice

5--children given no choice of activities; told which activity to do when. All children expected to follow teacher-made choice

CENTER RATING FORM (Cont'd.)

II. Individual Attention (Individual vs. Group)

(Do not count attention involving discipline)

individual	1--teacher attention focused on individual children's activities and schedules; few group activities or scheduled routines; children play and work on own schedule and at own level
	2--
	3--activities and schedules often set up for groups but teacher conscious of children as individuals; expectations of performance and teacher reinforcement geared to individual needs and abilities
	4--
group	5--entire focus of teacher attention is on the group; group conformity and group membership highly valued

III. Direction of Teacher - Child Interaction (Encouraging vs. Restrictive)

encouragement	1--interacts primarily to encourage and help in children's activities; rarely interacts to control or restrict behavior
	2--
	3--moderate level of both encouragement and restriction; no clear pattern either way
	4--
restriction	5--interacts primarily to control and restrict undesirable behaviors

IV. Tempo of Activities and Routine (Rushed vs. Lethargic)

rushed	1--rushed, hurried, giving impression of chaos
	2--fast pace, but not rushed atmosphere
	3--moderate tempo
	4--slow, easy going, relaxed
lethargic	5--lethargic

CENTER RATING FORM (Cont'd.)

V. Richness of Environment (Overwhelming vs. Non-stimulating)

overwhelming	1--great diversity of activities and equipment; chaotic atmosphere (no routine or restrictions on timing of activities); some activities beyond age level; so many children in one area doing so many different things, many children overwhelmed
	2--stimulating learning environment for 4 year olds
	3--adequate/average environment but limited in provision of new experiences or challenges
	4--inadequate activities and equipment to interest children for more than short periods each day
non-stimulating	5--environment and routine oversimplified to monotonous, boring point; few play materials or equipment; sterile

VI. Rule Enforcement (Reasonable, democratic vs. arbitrary, autocratic authority)

reasoning	1--explanations given to children for rules and restrictions; rules limited to those for which easily defended reasons can be given; rules situationally interpreted; rules made primarily for children's safety and welfare
	2--
	3--explanations given when obvious or convenient, but some rules must be obeyed just because adult says so
	4--
arbitrary authority	5--no explanations given for rules; children expected to obey just because adult says they must; rules often for adult convenience rather than children's welfare; circumstances rarely taken into account in application of rules

VII. Restrictiveness of Rules (Freedom vs. Restriction)

freedom	1--few restrictions on children's behavior; children often out of adult view; freedom borders on neglect

CENTER RATING FORM (Cont'd.)

VII. Restrictiveness of Rules (Cont'd.)

	2--few restrictions; children rarely out of adult view, but children not under continuous adult control
	3--moderate number of rules; children not given free rein but spontaneity and individuality fostered within the defined limits
	4--many rules and restrictions placed on children's behavior; rules limit children's spontaneity, curiosity and individuality
restriction	5--many rules and restrictions placed on children's behavior; restrictions well beyond those needed for children's safety or for smooth operation of center; children under constant adult control

VIII. Expression of Emotions (Expression vs. Control)
Can rate emotions separately when necessary

a. Children

expression	1--anger, dependency, affection, aggression, exuberance, etc. openly expressed
	2--
	3--occasional, moderate-intensity displays of emotions shown
	4--
control	5--anger, dependency, affection, aggression, exuberance, etc. rarely expressed

b. Adults

expression	1--anger, affections, aggression, exuberance, etc. openly expressed
	2--
	3--occasional, moderate-intensity displays of emotions shown
	4--
control	5--anger, affection, aggression, exuberance, etc. rarely expressed

CENTER RATING FORM (Cont'd.)

IX. Space (Crowded vs. Spacious)

a. Indoor 1--spacious

2--

3--average

4--

5--crowded

b. Outdoor 1--spacious

2--

3--average

4--

5--crowded

X. Space and Equipment (Flexible vs. Inflexible)

a. Indoor 1--flexible; each space used in many ways; teachers and children use space in any way want to facilitate an activity

2--

3--moderate flexibility

4--

5--inflexible; each space has designated use; children and teachers constrained in how can use space

b. Outdoor 1--flexible; space and equipment used in many ways; space arrangements allows for any kind of activity

2--

3--moderate flexibility

4--

5--inflexible; each area and piece of equipment has designated use; children and teachers constrained in kinds of activities can pursue

CENTER RATING FORM (Cont'd.)

XI. Space and Equipment (Expansive vs. Restrictive)

Indoor

1--expansive; almost all space and equipment is arranged to encourage expansive, unrestricted movement and use of materials. There is a lot of open space

2--

3--

4--

5--restrictive; amost no available indoor space or equipment which is arranged to allow unrestricted movement or use of materials; little open space; space arranged only for quiet table work, etc.

XII. Environment

1--overwhelming or chaotic

2--stimulating

3--adequate

4-some variation, but less than adequate

5--dull, non-varying

XIII. Child Response

a.

1--children exceptionally involved and genuinely interested

2--children involved and interested

3--children moderately involved and interested in program; program interesting for some of children

4--children reluctant to participate, generally disinterested

5--children refuse to participate or participate half-heartedly; are clearly disinterested (bored, restless, hyperactive or lethargic)

CENTER RATING FORM (Cont'd.)

XIII. Child Response (Cont'd.)

b.

1--relaxed, spontaneous, curious

2--

3--moderate in tenseness, spontaneity, and curiosity

4--

5--tense, inhibited, uninterested in new things

XIV. Sensitivity

1--environment (teachers, discipline, program) structured to make every child feel as if he is special, as good as any other child, learning and accomplishing many things; promotes individual's self esteem

2--

3--environment is structured so that there are several children who feel as if they are trouble makers, slow learners; that they don't perform or behave as well as other children

4--

5--environment (teachers, discipline, program) structured to make many children feel that they are "bad" or "problems"; that they don't perform or behave as well as they should; environment definitely undermines self esteem of many children

APPENDIX D

CHILD BEHAVIOR RATING FORM

We would like you to rate each child's behavior in each of the following six categories.

I	Cooperation	IV	Aggression/Assertiveness
II	Achievement	V	Social Orientation
III	Curiosity	VI	Independence

Base your ratings as much as possible on your actual observations of the child's behavior, not on remarks made by parents or staff members.

As a guide to your rating, each item presents a situation followed by descriptions of behavior that are high and low on a characteristic. A sample item for Shyness is presented below.

Shyness
When child is introduced to a new child:
1--Child is extremely shy. He does not approach or speak to the new child, even after several exposures in a secure setting
2--
3--
4--
5--Child readily approaches new child and engages him in conversation and play.

The numbers 1-5 are to be used in making your ratings. The descriptions presented beside numbers 1 and 5 are intended to be extremes on a continium of cooperative behavior, curiosity, aggression, etc., in particular situations. If the description given in 1 or 5 fits the child, record the appropriate number on the answer sheet. If the child's behavior is close to, but not as frequent or extreme as that described choose the next number. If the child's behavior seems to fall halfway between the two descriptions provided, select and record the middle number (3).

Rate on the basis of the child's typical response as you know it. Keep in mind that specific examples are presented in the description only to make them clear. The child need not display the exact behavior given as examples. For example, a "secure setting" for the child may be his bedroom, or his grandmother's home as well as his own home with Mother present. Avoid taking examples literally.

There are from 3 to 7 items, each presenting a different situation, for each of the six behavior categories. Avoid labelling the child as, for example, cooperative or uncooperative, before reading the situation

CHILD BEHAVIOR RATING FORM (Cont'd.)

described in each item under the Cooperative heading. The situation changes from item to item. Since a child might behave quite differently in two different settings, it is necessary that you rate the child on the behavior category in terms of how he would behave in the particular situation presented in each item.

Be sure to read both the description after 1 and after 5 on each item before making your rating. None of the descriptions is the "good" or "right" way for a child to behave. Just pick the number that best describes each child's behavior.

Record your rating for each item on the separate answer sheet.

If you have any questions, please ask before you do the ratings.

The ratings take approximately 15 to 35 minutes, depending on the number of children you are rating.

CHILD BEHAVIOR RATING FORM (Cont'd.)

I. Cooperation

A. When asked to help with chores or clean up after himself:

1--child nearly always cooperates cheerfully
2--
3--
4--
5--child almost never cooperates, even when threatened or punished

B. When child wants a share of something controlled by another child (e.g., playdough, crayons, food, marbles, etc.):

1--child nearly always asks nicely if he may have some of the desired object, and if refused, plays with something else
2--
3--
4--
5--child nearly always tries to take object by force. (Disregard whether or not child is successful. What is important is whether child attempts to take desired object)

C. When child has something that another child wants (e.g., playdough, crayons, food, marbles, etc.):

1--child sometimes volunteers to share with other children even without being asked; he nearly always shares willingly and fairly when asked by another child
2--
3--
4--
5--child will only share if another child forcibly takes some of the desired object, or an adult makes him share

D. When child is in a situation which requires taking turns:

1--child cooperatively takes turns
2--
3--
4--
5--child keeps other children from having their turns (e.g., may just hold onto ball, etc.)

CHILD BEHAVIOR RATING FORM (Cont'd.)

I. Cooperation (Cont'd.)

E. When child is engaged in a game requiring cooperative play (e.g., London Bridges, puppet show, dramatic play in which different children play different characters--playing house or store, etc.):

1--the activity is usually successful because the child shifts easily between leading and following as the situation demands. He accepts the ideas of his playmates and follows the rules of the game. Also, other children are usually willing to cooperate with this child.
2--
3--
4--
5--the activity never lasts very long because child quarrels and argues. He resists the ideas of other children and can seldom play cooperatively.

II. Achievement

F. When child is engaged in an activity:

1--child is nearly always very persistent in tasks he starts. He will work on a task for long periods of time despite the difficulty of the task or the presence of distractions.
2--
3--
4--
5--child's interest nearly always dwindles readily. He flits from one task to another, seldom finishing any task.

G. When child has an opportunity to participate in an activity which emphasizes individual performance or achievement (e.g., working a puzzle, making something, drawing, painting, carpentry, crafts, or playing a game in which there is a winner):

1--child is nearly always enthusiastic about activities which give him a chance to accomplish something or perform well.
2--
3--
4--
5--child is nearly always reluctant to become involved in activities which emphasize individual performance or achievement.

CHILD BEHAVIOR RATING FORM (Cont'd.)

II. Achievement (Cont'd.)

H. When child is participating in an activity which emphasizes individual performance or achievement:

1--child nearly always tries to do his very best.
2--
3--
4--
5--child almost never is concerned with doing his very best.

I. When the child has completed something (e.g., drawn a picture, worked a puzzle, played a game, etc.):

1--child nearly always seems to find intrinsic satisfaction in his performance. He almost never seeks attention or praise for his work and shows no need to criticize the work of others to make his own look better.
2--
3--
4--
5--child almost never seems to find intrinsic satisfaction in his performance. Child nearly always seeks attention and/or praise for his work and may even criticize the work of others to make his own look better.

J. When the child has completed something (e.g., drawn a picture, worked a puzzle, played a game, etc.):

1--child is nearly always satisfied with his performance. He may show his satisfaction by praising or displaying his work or by showing pride in his performance in other ways.
2--
3--
4--
5--child is almost never satisfied with his performance. He may show his dissatisfaction by destroying his work, crying or whining, looking upset.

K. In free play:

1--child usually spends nearly all of his time doing quiet, "thinking" activities such as reading, writing on paper or chalkboard, working puzzles, or trying to write words, letters, or numbers, or playing "lotto" or "Go to the Head of the Class" or children's card games, etc.
2--
3--
4--
5--child almost never spends much time doing quiet, "thinking" kinds of activities.

CHILD BEHAVIOR RATING FORM (Cont'd.)

II. Achievement (Cont'd.)

L. In a free play situation:

1--child usually spends almost all of his time in activities which require physical skill (such as throwing balls, bean bags, rings, or darts at targets, jumping with pogo sticks or jump ropes or walking with stilts, roller skating, having running or climbing races, playing with balls and bats, etc.).
2--
3--
4--
5--child amost never chooses physical-skill kinds of activities.

III. Curiosity

M. When available:

1--child is almost always eager to try new things.
2--
3--
4--
5--child almost always avoids new things.

N. When child is faced with unfamiliar objects or situations:

1--child is keenly curious. He asks many questions about things to gain information, not merely to get attention.
2--
3--
4--
5--child almost never asks questions to gain information. He seems either to not care or is too shy to ask.

O. When child is in a new, complex environment (e.g., a house he's never seen, or a place he's never been--fair, circus, store, etc.):

1--child almost always approaches the new environment and carefully explores many aspects of it.
2--
3--
4--
5--child almost never approaches the new environment or carefully explores it. He almost always seems to be overwhelmed or upset by new situations.

CHILD BEHAVIOR RATING FORM (Cont'd.)

IV. Aggression/Assertiveness

P. When child is in a social situation in which no one has especially provoked or mistreated him:

1--child often physically hurts others. He pulls hair, pushes down another child, kicks, pinches, bites, or hits others.
2--
3--
4--
5--child almost never physically hurts others on purpose.

Q. When child is in a situation in which no one has especially provoked or mistreated him:

1--child is often mean to other children in a non-physical way. He often says mean things, "tattletales", teases, takes or destroys other children's property, etc.
2--
3--
4--
5--child is almost never mean to other children in a non-physical way. He almost never says mean things, "tattletales", teases, takes or destroys other children's property, etc.

R. In a social situation:

1--child is bossy. He nearly always tries to dominate and direct other children.
2--
3--
4--
5--child almost never attempts to be a leader; he either follows (does what other children want) or ignores other children.

S. In any situation where an adult has authority over the child:

1--child often expresses open defiance in some way. He may hit the adult or be verbally aggressive (e.g., "I don't like you" or, "I'm not going to do what you say.") He may reject the adult's ideas and suggestions, and/or actively defy rules and regulations.
2--
3--
4--
5--child almost never expresses open defiance. He almost always responds with immediate and willing compliance to adult's direction and almost never breaks rules and regulations.

CHILD BEHAVIOR RATING FORM (Cont'd.)

IV. Aggression/Assertiveness (Cont'd.)

T. When another child intrudes on or attacks this child (e.g., destroys work, hits, takes toy or other property, insults, etc.):

1--child nearly always struggles with attacking child until he "wins" (i.e., until attacking child retreats, attacking child returns property, attacking child apologizes, etc.)
2--
3--
4--
5--child almost never attempts to defend himself when attacked, even if there is an adult or other child who could help him.

V. Social Orientation

U. In a social situation with children the same age or near this child's age (e.g., play group, when neighborhood or apartment building children play together, Sunday school group, playground children):

1--child has lots of friends. Many other children seek this child out as a playmate.
2--
3--
4--
5--child has few or no friends. Even if child tries to play with other children, they usually ignore or reject him.

V. When child is around teenagers or adults other than the parents:

1--they almost always are fond of this child and like to have him around.
2--
3--
4--
5--they usually consider him to be a nuisance and are glad when he leaves.

W. After child has been playing with other children:

1--child often imitates something he has seen or heard from his playmates. (For example, he may use new words or facial expressions that he learned from the other children, or copy the way a playmate runs or walks, or have a favorite activity just because it is his playmate's favorite too).
2--
3--
4--
5--child almost never imitates anything he has seen or heard from his playmates.

CHILD BEHAVIOR RATING FORM (Cont'd.)

V. Social Orientation (Cont'd.)

X. After child has been around teenagers or adults (other than parents):

1--child often imitates something that he has seen or heard from the adults.
2--
3--
4--
5--child almost never imitates anything he has seen or heard from the adults.

Y. In a situation where both adults and children are present:

1--child primarily seeks, and seems happiest with the friendship and approval of other children.
2--
3--
4--
5--child primarily seeks, and seems happiest with the friendship and approval of adults.

Z. In general:

1--there are several teenagers and/or adults beside his parents whom the child is obviously fond of. The child seeks to be with these adults, not necessarily instead of, but often in addition to desiring to be with his parents.
2--
3--
4--
5--child is not very fond of any adults other than his parents.

VI. Independence

AA. When child must be separated from the mother (e.g., at babysitter's, day care, Sunday school, nursery school, etc.):

1--child almost always cheerfully says goodbye to Mother or ignores her departure, and immediately becomes involved in the available activities.
2--
3--
4--
5--child almost always clings and strongly resists separation. He cries or calls for Mother several times through the period of separation, and is only really comforted when Mother returns.

CHILD BEHAVIOR RATING FORM (Cont'd.)

VI. Independence (Cont'd.)

BB. When child is slightly hurt (e.g., falls down or bumps something, but is not seriously hurt) or has a small accident (e.g., spills something, wets himself, etc.):

1--child is almost never upset. He immediately takes care of the situation himself without seeking any aid or comfort.
2--
3--
4--
5--child is almost always upset. He cries or calls for his Mother and/or immediately seeks aid and comfort from an adult.

CC. When child is participating in an activity:

1--child nearly always becomes involved in and enjoys only an activity that he was allowed to choose and in which he can do as he pleases.
2--
3--
4--
5--child nearly always becomes involved in and enjoys only an activity which is planned and directed by an adult.

DD. When child is expected to do something by himself:

1--child can nearly always perform routine activities (e.g., dressing, toileting, eating, playing, etc.) without adult help. He can also carry out clear requests or directions and plan some activities by himself.
2--
3--
4--
5--child can almost never perform even simple routine activities without adult help. He cannot carry out clear requests or directions or plan any activities by himself.

EE. When it is necessary for the child to play by himself:

1--child can nearly always play happily by himself.
2--
3--
4--
5--child is almost never able to occupy himself. He must have adults or other children to play with.

CHILD BEHAVIOR RATING FORM (Cont'd.)

VI. Independence (Cont'd.)

FF. When child has difficulty with another child (e.g., a fight, or a quarrel, other child refuses to share, etc.):

1--child nearly always settles the dispute to his own satisfaction without adult attention or help.
2--
3--
4--
5--child nearly always cries and/or in some way demands help from an adult or other child.

GG. When Mother picks up child after an absence (e.g., from day care, babysitter, play group, or friend's house):

1--child nearly always ignores Mother's return and continues with ongoing activities.
2--
3--
4--
5--child nearly always shows relief at Mother's return. He clings or in some way demands the Mother's attention.

APPENDIX E

TASK MEASURES IN CORRELATION MATRIX

[Significant ($r \geq .20, p<.01$) task-task correlations in parentheses]

Sex-Role

1. Masculinity of toy preference (5, 19, 20, 21, 29, 43, 48, 52, 60)
2. Number of masculine choices (5, 19, 20, 21, 48, 52, 60)
3. Number of feminine choices (5, 19, 20, 21, 29, 43, 52, 60)
4. Number of neutral choices (17)
5. Number of occupational choices (1, 2, 3, 15, 17)

Self-Concept (Face Game)

6. Friends rating
7. Happy rating
8. Brave rating (35)
9. Pretty rating
10. Strong rating (24, 46, 47, 48, 54, 58)
11. Good rating
12. Smart rating (15, 18, 35, 73)
13. Mother Love rating

Impulse-Control

14. Draw-A-Line, Tr. 1 time (17, 19, 20, 21)
15. Draw-A-Line, Tr. 2 time (5, 12, 17, 19, 20, 21, 23, 36)
16. Draw-A-Line difference score
17. Pull-A-String time (4, 5, 19, 20, 36, 65)
18. Mischel-Delay of Reward (12, 68)

Draw-A-Person

19. Articulation of Male drawing (1, 2, 3, 14, 15, 17, 29, 36)
20. Articulation of Female Drawing (1, 2, 3, 14, 15, 17)
21. Articulation of Self Drawing (1, 2, 3, 14, 15, 36, 52)
22. Sex-detail difference score
23. Number of emotional problems (15, 36, 74)

Curiosity

24. Box selected (10)
25. Percent novel manipulated after choice (70, 76)
26. Approach rating
27. Manipulation rating
28. Question-asking rating
29. Composite curiosity score (1, 3, 19)
30. Number of different toys manipulated (First 2 minutes)
31. Number of changes in toys manipulated (First 2 minutes)
32. Number of changes in toys manipulated (Last 2 minute period) (67, 70, 73)

Berlyne Shapes

33. Number of high complexity preferences (75)
34. Number of items viewed before complaint

TASK MEASURES IN CORRELATION MATRIX (cont'd.)

Achievement Motivation (picture preference)
35. Number of physical achievement choices (8, 12)
36. Number of non-physical achievement choices (15, 17, 19, 21, 23)
37. Number of physical non-achievement choices
38. Number of non-physical non-achievement choices (48, 56)

Academic Achievement (memory task)
39. First estimate
40. Second estimate
41. Attainment discrepancy
42. Goal discrepancy

Physical Achievement (bean bag)
43. Distance (tr. 1)(1, 3)
44. Distance (tr. 2)
45. Distance (tr. 4)
46. Predicted Success (tr. 1) (10)
47. Predicted Success (tr. 2) (10, 73, 76)
48. Predicted Success (tr. 3) (1, 2, 10, 38)
49. Predicted Success (tr. 4)
50. Actual Success (tr. 1)
51. Actual Success (tr. 2)
52. Actual Success (tr. 3) (1, 2, 3, 21)
53. Actual Success (tr. 4)
54. Attainment Discrepancy (tr. 1) (10)
55. Attainment Discrepancy (tr. 2)
56. Attainment Discrepancy (tr. 3) (38)
57. Attainment Discrepancy (tr. 4)
58. Goal Discrepancy (tr. 2) (10)
59. Goal Discrepancy (tr. 3)
60. Goal Discrepancy (tr. 4) (1, 2, 3)

Attachment (Who Stories)
61. Happy - % non-family adult choice
62. Happy - % parent choices
63. Happy - % child choices
64. Sick - % non-family adult choices
65. Sick - % parent choices (17)
66. Sick - % child choices
67. Frustrated - % non-family adult choices (32)
68. Frustrated - % parent choices (18)
69. Frustrated - % child choices
70. Sad - % non-family adult choices (25, 32)
71. Sad - % parent choices
72. Sad - % child choices
73. Undecided - % non-family adult choices (12, 32, 47)
74. Undecided - % parent choices (23)
75. Undecided - % child choices (33)
76. Scared - % non-family adult choices (25, 47)
77. Scared - % parent choices
78. Scared - % child choices

APPENDIX F

MOTHER INTERVIEW

I. General Description

Question: If you were to describe X to someone who didn't know him, what kinds of things would you say? What stands out to you most about X?

Scale:
1--Positive description
2--
3--
4--
5--Negative description

II. Restrictiveness

Question: What kinds of rules do you have about what X can and can't do?

Probes:

A. Do you have any policies about pick up toys, cleaning up his room, etc.

B. Are there any restrictions on where X can play in the house?

C. Do you have any boundaries outside? How far can X go away from the house without asking?

D. At the table, do you have any policy about X's eating everything on his plate? If he doesn't clean up his plate and wants a snack later, how do you typically respond?

E. When is X's bedtime? Is that a fixed time or does it vary on weekends or depend on TV programs?

Scale:
1--Parents' standards for child's conduct are restrictive beyond all reasonable interpretation of either the child's welfare or family convenience.
2--
3--Standards and regulations are moderate in number and scope; child allowed considerable freedom within specified limits.
4--
5--Standards are both scarce and mild; extent of the child's freedom borders on neglect.

MOTHER INTERVIEW (Cont'd.)

III. Democracy-explanations

Question: Some parents think that it's important to give children reasons for why they're supposed to do and not do certain things. Other parents think that their child should simply do what he's told with or without a reason. What do you think about it?

Probe: Do you ever find yourself saying, "Just do it" or "do it, because I said so"?

Scale:
1--High reasoning
2--
3--
4--
5--Dictatorial

IV. Democracy-part in rule-making

Question: Some parents think their child should have a say in setting up rules for his behavior. Other parents think that the child has no business in helping make the rules. What do you think?

Probes: A. Would you listen to X if he had some reason why he thought he should be allowed to do something, or would you think he was being sassy?

B. Does X help pick out his own clothes at all?

Scale: Rate the parent's tendency to share with the child the formulation of regulations for the child's conduct. Does the parent give the child a voice in determining what policy shall be? Or, does the parent hand down the established policy from above? Rate independent of restrictiveness of regulations or extent policies are wise. Consider both whether or not the parent consults with child at all and whether he considers the child's wishes.

1--Parent will endure inconvenience and some risk to child's welfare in giving child large share in policy forming. Consults with child in formulating policies whenever possible.
2--
3--Parent neither democratic nor dictatorial deliberately. Follows most practical or easiest course in most situations.
4--
5--Parent dictates policies without regard to child's wishes. Never consults child when setting up regulations.

MOTHER INTERVIEW (Cont'd.)

V. Direction of Evaluation

Question: Some parents find it difficult to praise their child at all because no matter how simple the task, the child seems to always goof things up some way. He can't seem to do anything right. Do you ever feel this way about X?

Probes: A. How would you react if X had worked very hard making his bed but it still came out sort of lumpy?

B. How about when X makes a picture and you're not quite sure what it is - how would you say you typically respond?

Scale:
1--Warm, unambiguous approval and praise of even rather ordinary behavior. Shortcomings of child overlooked or excused.
2--
3--Balance in evaluation. Praise or disapproval given depending on the merits of the child's behavior.
4--
5--Parent always finding fault. Ignores or even belittles praiseworthy behavior, picking out minor details to criticize disproportionately.

VI. Aggression-towards adults

Question: Sometimes a child will get mad at his parents and hit or kick or call them names. How much of this do you allow? How do you handle X if he acts this way?

Probes: A. How do you generally react if X says, "I hate you" or "I don't like you any more"?

B. Do you ever punish X for that sort of thing? (If so) How? Do you ever spank X for getting mad at you?

Scale:
1--Encourages adult aggression
2--
3--
4--
5--Punishes adult aggression

VII. Aggression-peer

Question: How about when X is playing with some other children and gets into an argument or a fight; how do you handle this situation?

MOTHER INTERVIEW (Cont'd.)

VII. Aggression-peer (Cont'd.)

Probe: A. Do you ever punish X for fighting? How?

Scale: Rate the parent on the extent to which he allows and/or encourages aggressive behavior. Aggressive behavior may include angry verbalizations, hitting, kicking, fighting, etc.

1--Encourages aggression as means of getting his way
2--
3--Tolerant of moderate amount, especially if in self-defense
4--
5--Punishes aggression by reprimand or spanking

Have you ever encouraged X to fight back?

1--Often
2--
3--
4--
5--Never

VIII. Cooperation-method of encouragement

Question: Is there anything that you do to try to get X to be more cooperative and to share better?

Probe: A. Do you even try giving X reasons for why he should cooperate or help? What kinds of things do you say?

Scale: Rate manner in which parent encourages cooperative behavior in child. Does the parent give mandate; or does parent give reasons for cooperating with adults and peers. Cooperative behavior includes taking turns, helping, working together on common goals, etc.

1--Parent expects and praises cooperative behavior. Gives reasons for cooperating. Attempts to help child understand benefits of cooperation for self and for others.
2--
3--Parent expects cooperation but does little in way of praise, reasoning or punishment to obtain results. No characteristic way of handling cooperation training.
4--
5--Parent expects and demands cooperation but gives no reasons or explanations. Child expected to obey cooperation demand because parent says so. Punishment threatened or administered for not cooperating upon demand.

MOTHER INTERVIEW (Cont'd.)

VIII. Cooperation-method of encouragement (Cont'd.)

Note: Parent may not expect or demand cooperation but have the view that children must fight it out for themselves with no adult intervention. If parent fits this view check here _____.

IX. Sex-Role

Question: Some parents think that there are some activities and toys that should be just for girls and some for boys. Other parents don't think it makes any difference what a child plays with or does. What do you think? How about when X is older; how important do you think it is for girls to behave like girls and boys like boys?

Probes:

A. (if male child) Does it bother you if a boy plays with clothes, likes to play dress up or wants to try fingernail polish? Would you buy a doll for X if he wanted it?

B. (if female child) Are there times when you tell X to act more "lady like"?

C. (for both male and female) Is there an age when you think it will be important to you that your child be primarily interested in girl/boy activities and toys?

Scale: Rate the extent to which parent expects and encourages sex-appropriate behavior in the child. Does the parent place high value on appropriate sex-behavior? Is child punished or teased for engaging in opposite-sex activities; or is he encouraged to do whatever he wants, irrespective of sex-appropriateness?

1--Parent very clear about what is proper behavior for little boys and girls. Discourages and/or punishes opposite sex activities and toys. Parent is often upset by any interest by the child in opposite sex activities and toys.
2--
3--Parent shows approval for sex-appropriate behavior but is not upset by the child engaging in opposite sex behavior.
4--
5--Parent consciously attempts to interest child in opposite sex behaviors. Encourages opposite sex behaviors as much or more than appropriate sex behavior.

MOTHER INTERVIEW (Cont'd.)

X. Attention

Question: Some parents feel children need a lot of attention. Others feel that attention spoils the child. What do you think?

Probes: A. Do you think a Mother can give a child too much attention?

B. How do you feel about a Mother's getting down and playing the child's games sometimes?

Scale:
1--Necessary
2--
3--
4--
5--Spoils

XI. Babying-self-help

Question: Some parents think that a child should learn to do things for himself as soon as possible. Other parents feel that most children usually will need help with most tasks for quite a long time. (e.g., dressing self, picking up toys, eating, going to school, making something) What do you think?

Probe: A. How do you generally respond if X asks for help on something that you know he knows how to do?

Scale:
1--Early self-help
2--
3--
4--
5--Late self-help

XII. Readiness of Explanation

Question: Most children are pretty inquisitive and ask a lot of questions. They seem to want to know what everything is and why it's the way it is. Some parents feel tormented by all the whats and whys. Others enjoy and encourage it. How do you react to X's asking a lot of questions? Do you usually try to answer them?

Probe: A. Would you say you generally enjoy X's questions or do they sometimes get on your nerves?

MOTHER INTERVIEW (Cont'd.)

XII. Readiness of Explanation (Cont'd.)

Scale: Rate the parent's tendency to satisfy the child's intellectual curiosity. Does the parent readily respond to the child's "Why?" and "How?" questions; or is the child thwarted in attempts to get information and explanation from the parent?

1--Never too preoccupied to answer child's questions as adequately as possible. Anticipates questions. Encourages curiosity with willing explanation.
2--
3--Will answer questions if convenient but does not actively encourage curiosity-based question.
4--
5--Thwarts child's curiosity. Discourages question asking.

XIII. Achievement

Question: When your child is learning a new skill or a new game, how important is it to you that he do very well compared with other children?

Probe: A. Do you think you would be disappointed if your child were not at least average on most things he tries?

B. Is it important to you that X always tries his best?

Scale: Rate extent parent shows concern with child's succeeding, being the best in academic, social and/or physical skills.

1--Parent expects and praises accomplishments in activities. Makes comparisons with other children, always wanting to know if her child is doing better than average (be the best).
2--(Be about same as others).
3--Praises child's accomplishments but is only concerned that child is happy and doing "the best he can". Does not push child to be the best (do his best).
4--(Doesn't matter; up to child).
5--Little attention or concern for the quality of child's accomplishments. No push for child to "succeed" or do well. Parent may be disinterested in child or emphasize "being a good boy or girl" (not getting into trouble) more than achievements in activities.

MOTHER INTERVIEW (Cont'd.)

XIV. Acceleration Attempt

Question: Are there any special activities that you do with your child or enroll him in, in an attempt to help him do well?

(See response to "Babying" question and use in making rating).

Scale: Rate the extent to which the parent strives to increase the rate at which the child is developing. Is the parent overly concerned about the child's mental and physical progress? Does the parent deliberately seek to train the child in various mental or motor skills which are not yet essential at his age; or is the child expected to "grow naturally"; or is the child shielded from accelerational influences?

1--Parent subjects child to regular and intensive training to develop more mature mental and/or physical skills.
2--
3--Child expected to "grow naturally". Attempts to provide stimulation but little attempt to provide deliberate training for more mature skills.
4--
5--Protects child from accelerating influences to the point that the parent attempts to hold back growing up.

XV. Acceptance-on being a parent

Question: Many parents wonder if parenthood is worthwhile. For others it's the only thing that gives their lives meaning. Do you enjoy being a parent or do you sometimes wonder what's good about it?

Probe: A. Knowing what you know now about what your life has been like and what it's like with kids, do you think you would do it again?

Scale: 1--Enjoy parenthood; child viewed as positive addition to life
2--
3--
4--
5--Dislike and resent; child seen as intrusion and obstacle.

MOTHER INTERVIEW (Cont'd.)

XVI. Resentment

Question: Some parents say that they find themselves resenting the time, responsibility and financial burden of children. Do you ever find that part getting you down?

Scale:
1--Not resent
2--
3--
4--
5--Resent a lot

XVII. Acceptance-life style

Question: Most parents say that their lives (life style) are different with children. How much do you think parents ought to let their lives be altered by having children?

Scale:
1--Alter
2--
3--
4--
5--Not alter

XVIII. Goals

Question: The last question has to do with your goals for X. What would you say would be your goals for X? What type of person would you like to see him grow up to be?

Probes:
A. Do you care how far X goes through school?

B. Do you think you would be disappointed if X never married and had a family of his own?

Rate major theme, education level, and marriage goals separately.

Education Scale:

1--Don't care how far
2--Finish high school; not care beyond
3--Would like college; but not push
4--Will make college available and encourage
5--Definitely want child to attend college

XVIII. Goals (Cont'd.)

Marriage Scale:

1--Don't care
2--Up to child
3--Would be disappointed if not marry, but won't show it
4--Want marriage and children, but not too early
5--Want marriage and children

General Goals Scale:

1--No specific goals
2--Be happy
3--Know self; find peace
4--Be liked by others
5--Not get into trouble
6--Be responsible; respectable
7--Be professional; have career

APPENDIX G

WHO STORY INSTRUCTIONS, STORIES, AND PICTURES

General Instructions

(Seat child at table and place closed book on table.)

I'm going to tell you some stories. These are not regular stories like Little Red Riding Hood. These are special stories where you have to pretend. I bet you can pretend! You pretend the story is about ______________ (child's name) and think, "How would it feel if that story happened to me? What would that make me feel like?" Okay? Then at the end of the story, you tell me who you would like to have with you in the story. What person would you like to be with if that story happened to you. Okay?

First, let's think of all the people you know. Okay? Can you tell me the name of somebody you know? (The child was encouraged to include people from all of the following: family, neighborhood peers, day care peers, teachers, grandparents, cousins, aunts and uncles, non-related adults.)

Stories

Happy. This is a happy story. Here are the pictures. Let's pretend that you get to go to this magic candy land where everything is made out of candy and cake and ice-cream. Look, here's an ice-cream cone apartment house, and here's a candy cane road - it runs from this apartment house down here, up by this cupcake house and on up to this birthday cake house. Where do you think you would live? See all these little flowers. They're made of candy. If you get hungry, you can just pick a flower and eat it. You know what else is in the magic land? There is a real pony that kids can ride. He's a nice one. And a real car - just like a grown up's. With a motor and everything - that kids can drive - it's just for kids. And see this sign? It points the way to a giant toy store where there's all the toys in the world. And it's a special store because you don't have to pay for the toys. The storeman just gives them to you. And, in this magic land you can do anything you want all the time, and no one ever gets made at you. Would you be pretty happy there?

(Very excitedly say) Well, let's pretend you get to go to the magic candy land. Who would you take with you? When you feel very happy what person do you like to have with you? Tell me the name of someone you want to take with you - a person.

(After first and second responses) Is there anyone else or is that all? (After third and successive responses) Is that all?

WHO STORY INSTRUCTIONS, STORIES, AND PICTURES (Cont'd.)

Sick. This is a story about being sick. Have you ever been sick? (If child says no, ask him to pretend just for now.) Let's pretend that you were playing outside one day and have a good time, until all of a sudden you didn't feel very well, and you thought you were a little sick because your head hurt and your stomach hurt, and you felt like you were going to throw up (make face like you are sick). Did that ever happen to you? (If yes) That's yucky isn't it? You don't feel good and it's not much fun. (If no) Well let's pretend you threw up. Do you know what that would feel like? It feels really yucky.

Well let's pretend you were really sick and you had to go to bed and take medicine to make you well. If that happened and you were sick in bed and you felt really bad with a stomach ache, who would you like to have with you? Who do you like to have with you when you feel sick?

Frustrated. Here's a story about when you can't do something because it's too hard. Let's pretend you were playing with this lion puzzle. Have you ever worked a puzzle? (If no, explain what puzzles are.) Let's pretend you were working this one and you got all the pieces out and started putting them back. You got all these back in, but there were all these others that you couldn't find a place for. You know why? The puzzle was too hard for a 4 year old. It had 20 pieces and it was just too hard. (If child insists he could do it, tell him to pretend it was too hard even for him.) Let's pretend you wanted to put the puzzle away and play with something else. But, you couldn't get anything else until you got the puzzle back together. You didn't want to lose the pieces. So you tried and tried to put all the pieces together, but you still couldn't get them all in, no matter how hard you tried. And you got mad at that dumb old puzzle (hit puzzle) because it was too hard for you. Did you ever get made because you couldn't do something, because it was just too hard? Did that ever happen to you? Sometimes things are just too hard, aren't they? Well, when you feel mad when you can't do something because it's too hard, who do you like to have with you?

Sad. This is a sad story about a pet. What kind of pet would you like this to be a story about? (Just one) Okay. Let's pretend you have a pet _______ and you love your ______ because he's your friend and he loves you too. He's your pet (fondly), and you have fun together. You feed him and he follows you around sometimes when you're playing. But one day, you know what? Let's pretend your ______ got sick (sadly). And you took care of him and you tried to make him well. And you even took him to the doctor and the doctor gave him some medicine and tried to make him well...but he didn't get well (sad). And he got sicker and

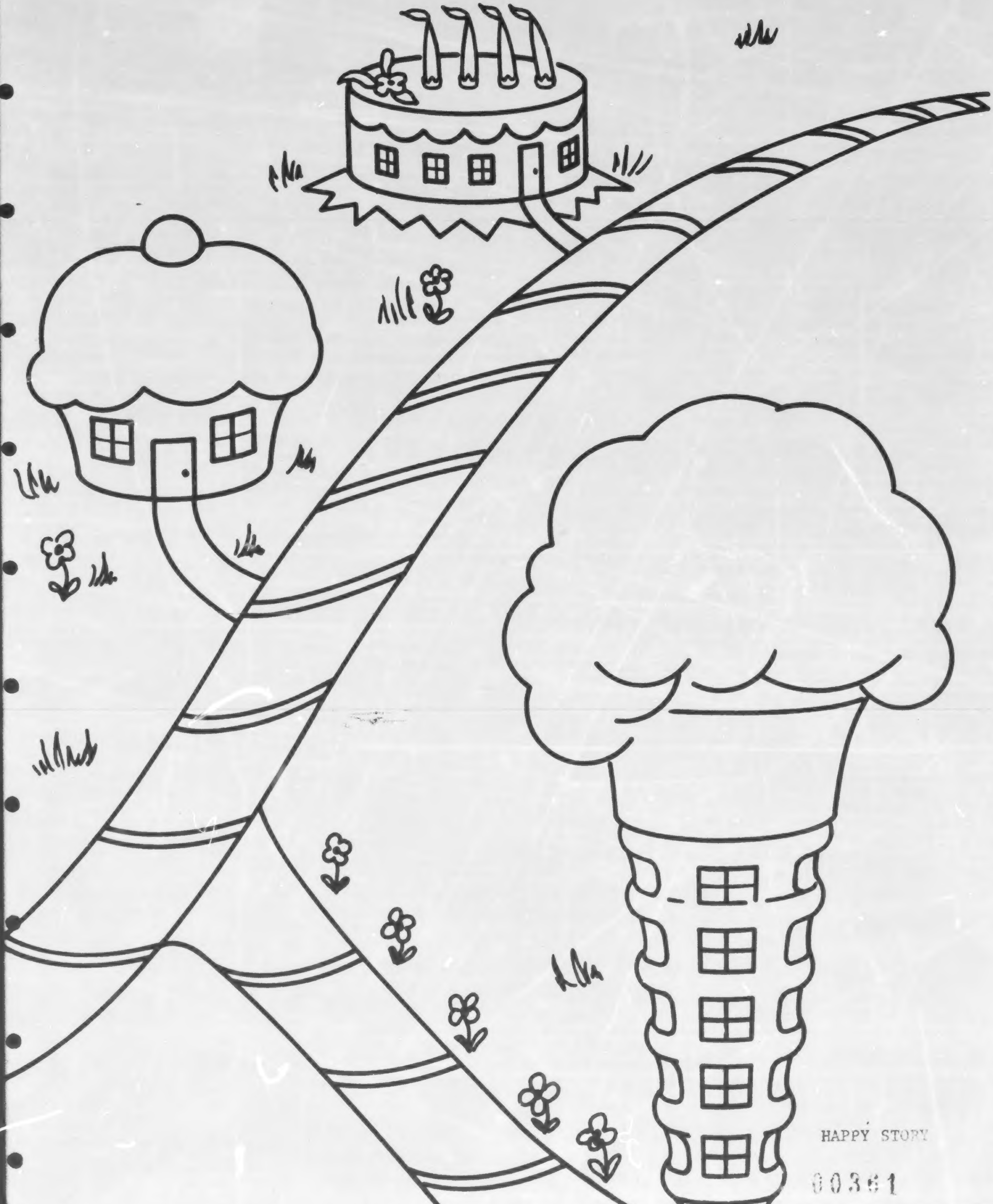
WHO STORY INSTRUCTIONS, STORIES, AND PICTURES (Cont'd.)

sicker...and one day let's pretend he died (very sad voice and face). And you were so sad because he was your friend and you loved him and then he died. Wouldn't that be sad? I bet you might even cry a little bit. Well, if that happened, who would you want to be with? When you are very sad, who do you like to have with you? (If child says animals from the page of pictures) Let's turn the page over since _________ is dead. (Then repeat) When you are really sad, what person do you want to have with you?

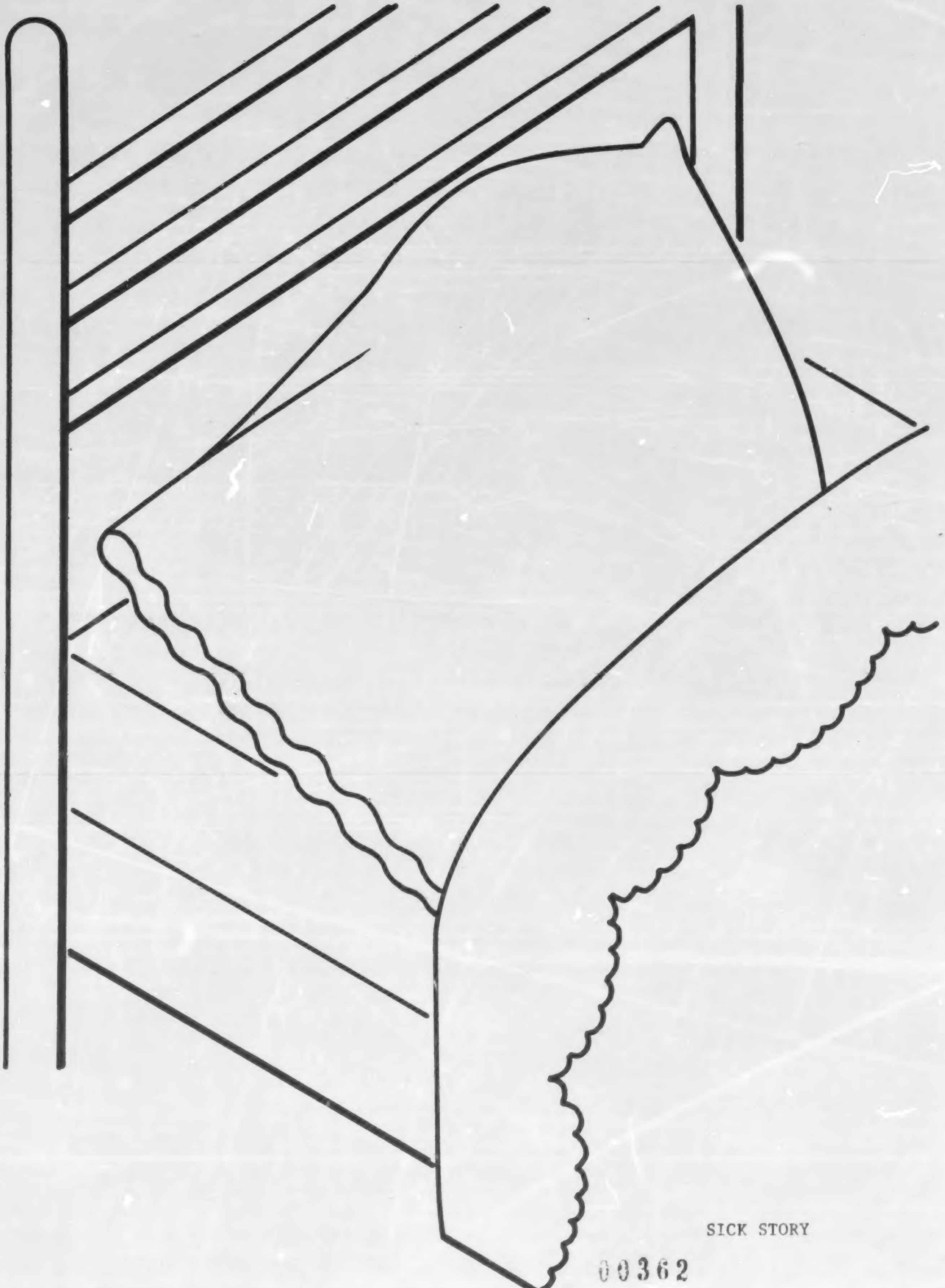
Uncertain. This is a story about when you can't make your mind up. Let's pretend that it's your birthday and somebody came up to you and said, "__(child's name)______, since it's your birthday, you get to go to a big toy store and pick out one toy for your birthday present." So you went to the toy store, and when you got there, there were all these toys (point to picture) and even more. There were 100 toys! And you looked at all those toys and you liked a whole bunch, but you could just have one. There were so many toys, you couldn't make up your mind - you couldn't even decide. Sometimes it's hard to choose, isn't it, because they're so many nice things. (If child points to one and says "I want that one", direct his attention to other attractive toys.) Let's pretend you couldn't make up your mind. If that happened to you, who would you like to have with you at the toy store?

Scared. This one is a scarey story. Do you like scarey stories? (If child balks, explain that the story is just pretend.) Let's pretend that you were taking a walk in these woods in the afternoon. You were having a good time, watching the birds and looking at flowers, but all of a sudden you realized you had taken such a long walk that it wasn't afternoon anymore; it was night time. And the moon had come up and it was dark! You looked around, but you didn't even know the way back. You were lostm all alone in the forest. That would be scarey wouldn't it? Let's pretend you turned around and looked at the trees and they didn't look like trees anymore. In the dark they looked scarey - like they had big arms and were trying to get you (make motions like you're a tree trying to get child). And you know what happened next? You heard a loud noise (make loud scarey noise), and you didn't know what it was, did you? You thought it might be a bear, or a wolf, or a monster, or a ghost!! You were so scared! Wouldn't you be scared? (If S says no) I would be scared. Let's pretend you were really scared, okay?

Well, think about that. If you were there in the forest, all alone, lost, in the dark with the scarey trees and the loud noises and the monster about to get you - who would you want to have with you?

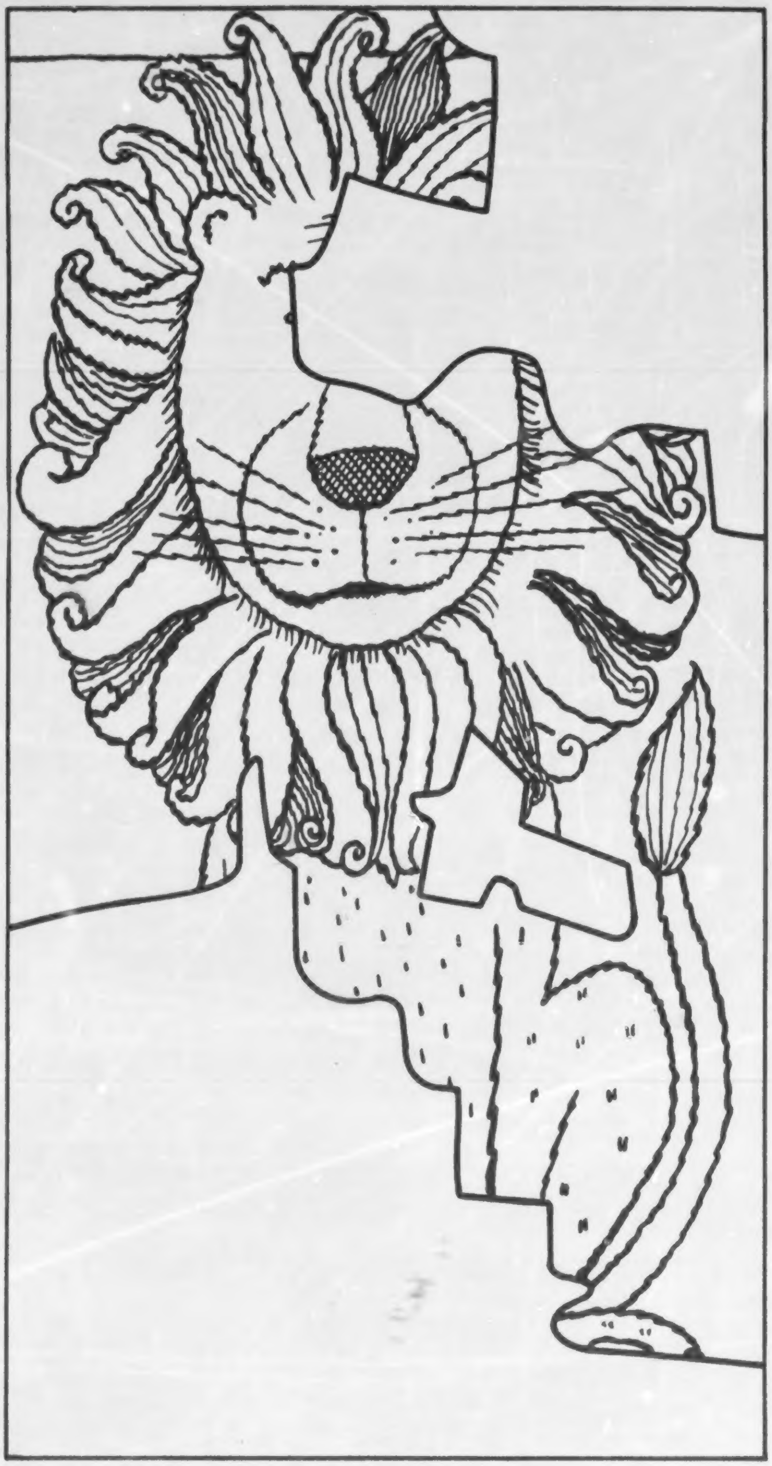


HAPPY STORY

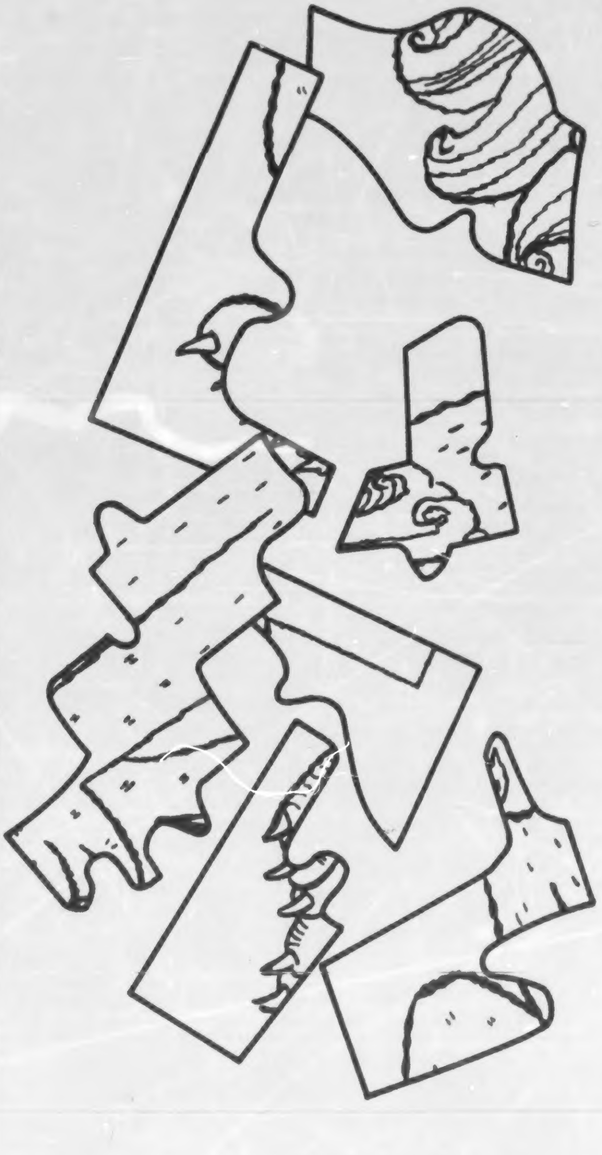


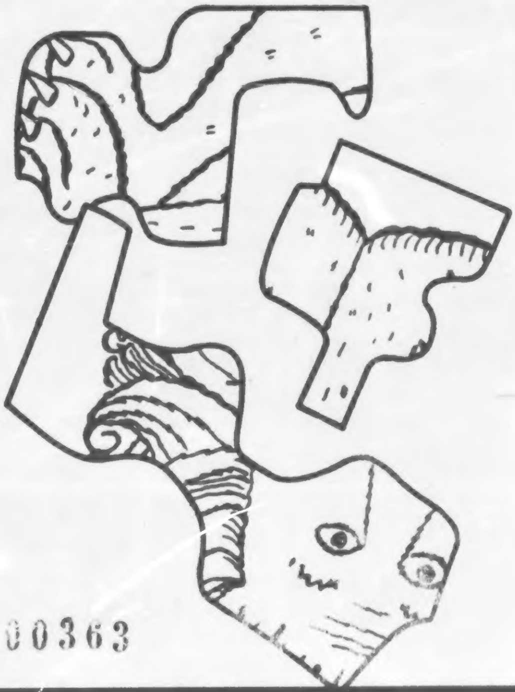
SICK STORY

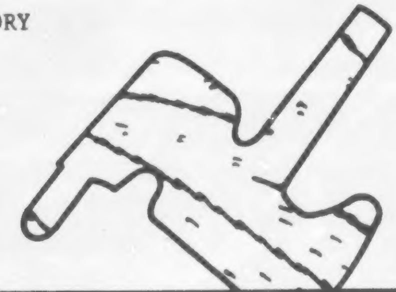
00362

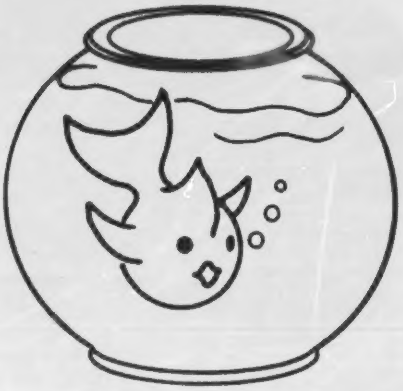


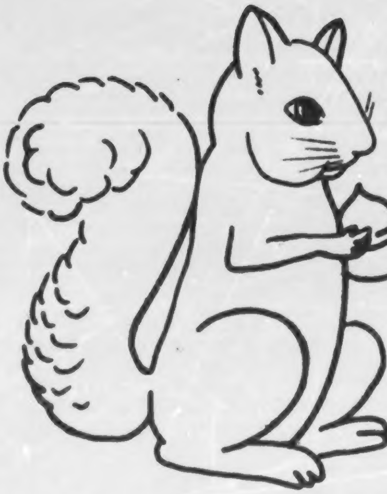
FRUSTRATED STORY

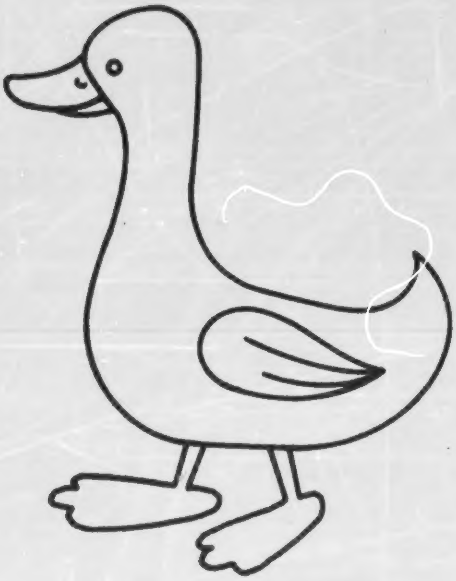


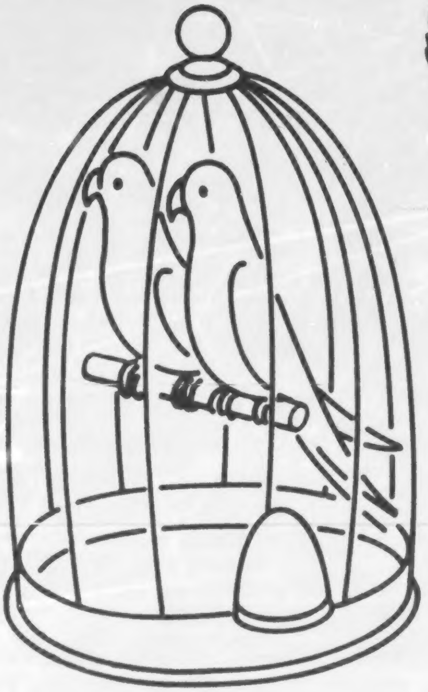


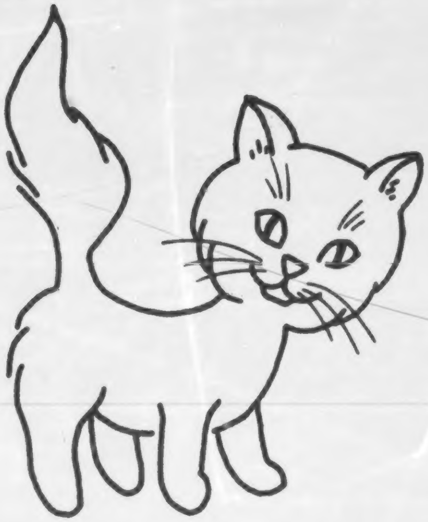


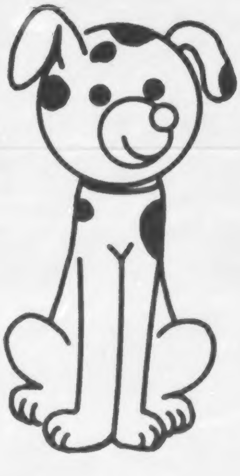


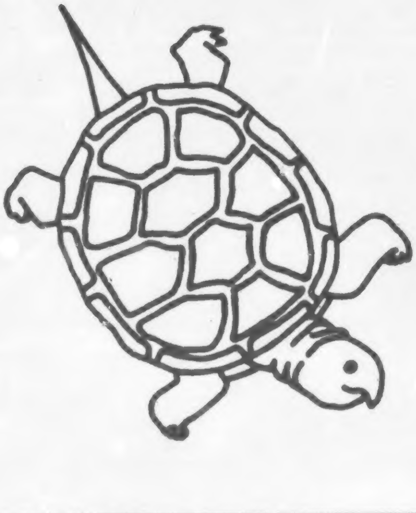


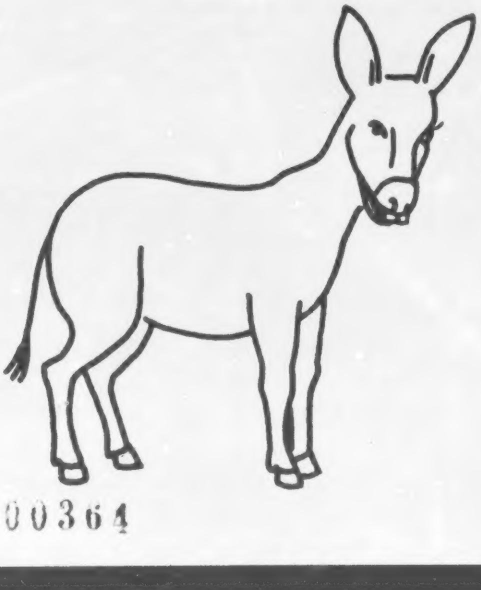




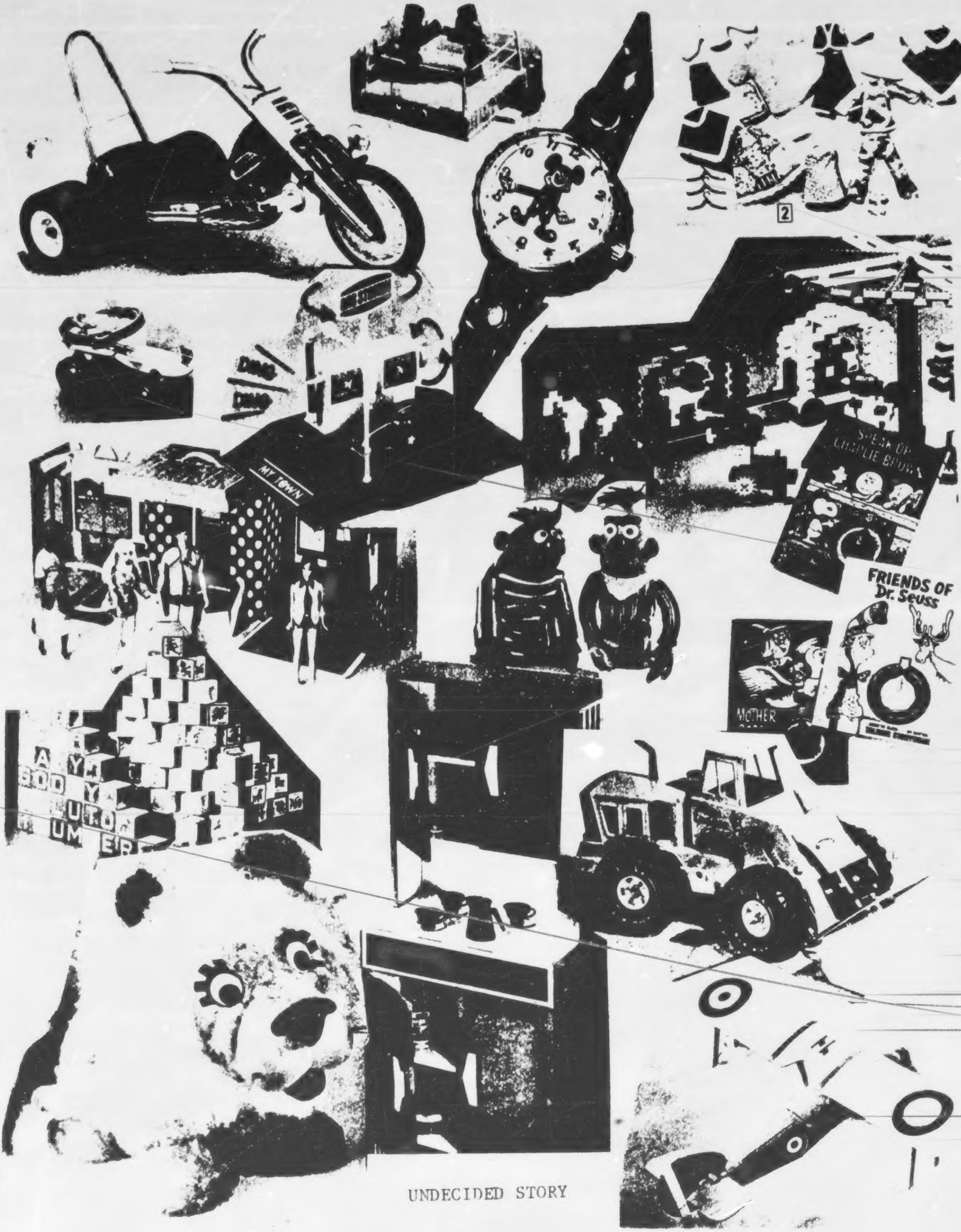




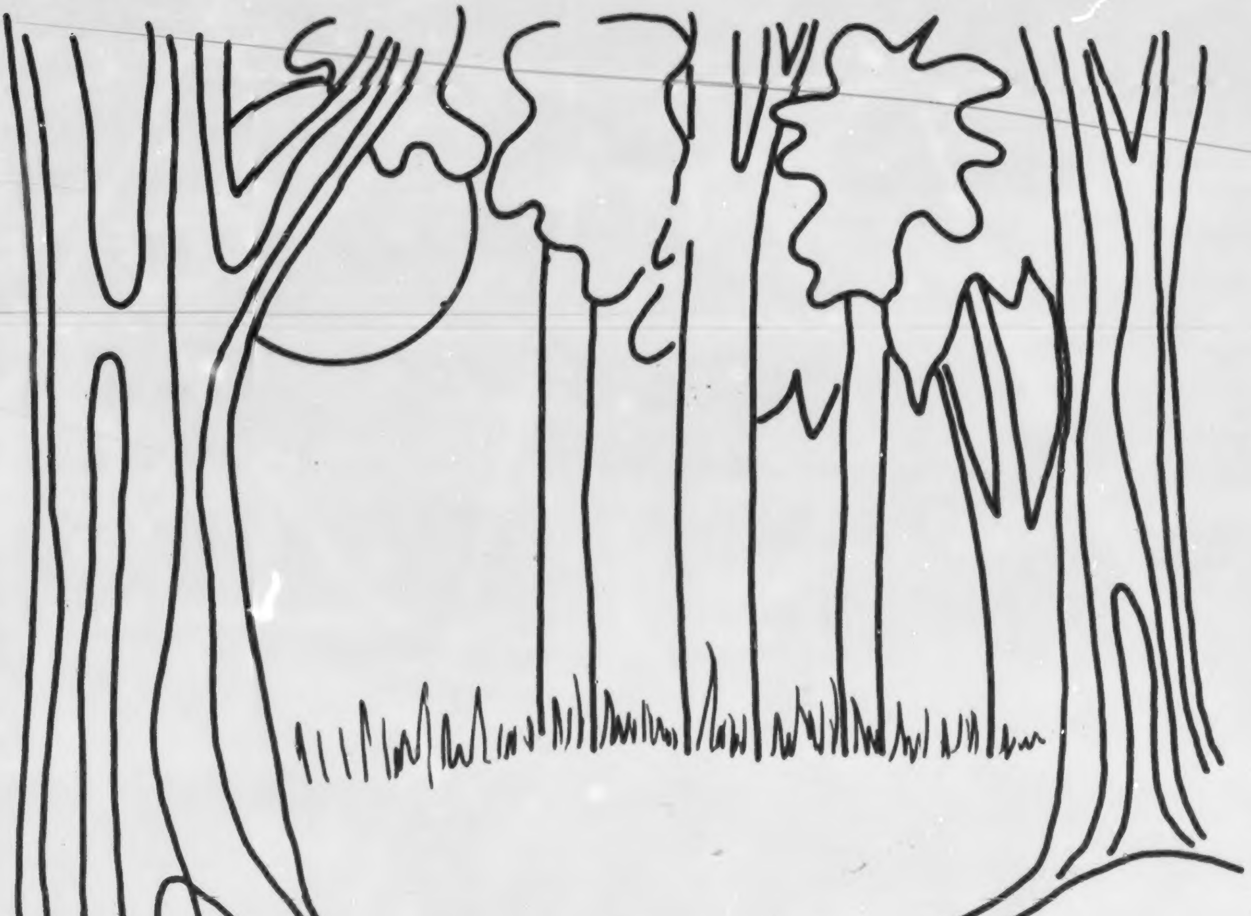




SAD STORY


2
DING
DING
MY TOWN
SPEAK UP, CHARLIE BROWN
FRIENDS OF
Dr. Seuss
MOTHER

UNDECIDED STORY



SCARED STORY

APPENDIX H

ANCHORS FOR FACE GAME SUBSCALES

The descriptions for all 5 scale points are presented for the first subscale. For other subscales only the descriptions anchoring the ends are presented here. They were similar in form to those for the first subscale. The number preceding each description indicates its point value. Sex-appropriate pronouns were used in all actual descriptions.

Subscale 1: Friends-No Friends

5--This child over here has lots of friends. All the kids like to play with him all the time. He has the most friends.

4--This child has pretty many friends, too. He doesn't have as many friends as this boy, but he has pretty many friends. Most of the kids like to play with him.

3--This child has some friends. He doesn't have too many friends, but he's got some. Some children like to play with him.

2--This child doesn't have many friends; he only has a few friends. Only a few kids like to play with him.

1--This child doesn't have any friends at all. None of the kids likes to play with him. (If S asks why face has no friends, say, "I don't know, but none of the kids likes to play with him.")

Subscale 2: Happy-Sad

5--This child is happy all the time. He was never sad. He's always happy and laughing and having a good time.

1--This child is very sad. He's always sad and never happy. He's the saddest one.

Subscale 3: Brave-Scared

5--This child is very brave. Of all the four year old boys/girls, he's the bravest one. He's not afraid of anything, even monsters or ghosts. He's never scared. (If S asks, is he afraid of X, say, "no, he's not afraid of anything.")

1--This child is the scaredest one. He's not brave at all. He's afraid of everything. He's afraid of the dark, and afraid to be by himself, and afraid of animals, and people he doesn't know. He's scared all the time.

ANCHORS FOR FACE GAME SUBSCALES (Cont'd.)

Subscale 4: Pretty-Ugly

5--This child is the prettiest one. Of all the four year old boys/girls he's the prettiest one, and a lot of times people say, "My, what a pretty boy/girl." (Note: Boys did not comprehend the word handsome and had no objection to being called pretty.)

1--This child is very ugly looking. He's not pretty at all. Of all the four year old boys/girls he's the ugliest one, and a lot of times people say, "My, what an ugly little boy/girl."

Subscale 5: Strong-Weak

5--This child is really strong. Of all the four year old boy/girls he is the strongest one. He has a lot of muscles and he can run really fast and lift up heavy things. He's the strongest one.

1--This boy/girl is the weakest one. He doesn't have any muscles and can't lift things and he's a very slow runner. He's the weakest one.

Subscale 6: Good-Bad

5--This child is the best one. He's always good. He always does exactly what his mother tells him and what the other grown-ups tell him. He's always good and he's never bad.

1--This child is very bad. He never does what his mother tells him or what the other grown-ups tell him. He's always doing things he's not supposed to do, and he never does what he's supposed to do. He's always bad and never good. He's the baddest one of all.

Subscale 7: Smart-Dumb

5--This child is very smart. Of all the four year old boys/girls he's the smartest one. He's so smart that he can almost read and write and spell and count. He's almost as smart as his mom.

1--This child is the dumbest one. If you try to tell him something, he never understands. If he tries to do something, he always messes it up and does it wrong because he is so dumb.

ANCHORS FOR FACE GAME SUBSCALES (Cont'd.)

Subscale 8: Perceived Maternal Acceptance-Rejection

5--This child thinks his mother loves him a whole lot because she likes to play with him whenever she can, and she makes him happy. This little boy/girl thinks his mother is really happy she has a little boy/girl to love.

1--This is a boy/girl who thinks his mother doesn't love him at all. His mother doesn't like to play with him at all and his mother makes him sad. This little boy/girl thinks that his mother would be happier if she didn't have a little boy/girl.

APPENDIX I

PICTURE MEMORY INSTRUCTIONS

Do you know what it means to remember something? Well, let's see. (Show wagon picture.) What's the name of this picture? That's right! Now, if I turn this picture over, cover it up, and then say, (child's name), do you remember the name of the picture, what would you say? How did you know that! You can't even see the picture any more but you know what it is. You must have remembered it--you didn't forget.

We're going to try to remember some more names of pictures now. See these circles (lay out pages as talk). They mean that there are three different pictures on the other side. And on this page, there are four different pictures; on this page five different pictures; ...eight different pictures.

I'm going to ask you to remember the names of the pictures on one of these pages. Let's pretend that these are circles on my hand. I'll turn the page over like this (turn hand so child sees palm), and you can tell me the names. Then, I'll turn it back over and all you'll see are the circles. Then, I'll say, (child's name), do you remember the names of the pictures? That's just the same as we did with the wagon picture, isn't it?

First, let me tell you something about these pictures. Most children can remember three pictures; that's pretty easy. It's not too hard to remember three pictures. But, you know, up here we have eight pictures. That's a lot, isn't it? Not very many children can remember eight pictures. That's pretty hard. It's pretty tough to remember the names of eight pictures.

You know, I wonder how many pictures you think that (child's name) can remember. Which page do you think you want to try? (Point to the page with three pictures). Do you think three pictures like most children, or do you think more--do you think 4, or 5, or 6, or 7, or 8? How many do you think you can remember; which page do you want to try? You choose the page that you think you'll be able to remember all the names of the pictures on.

(Show child page he selects and ask him to name the pictures. Then turn it over and ask for recall. If child does not rattle them off, prompt after each with, "What else did you see?" When child has finished recall, tell how many he has remembered and show which ones by turning over the page and pointing. Then ask him to pretend that there were all new pictures. Ask him how many he thinks he would want to try to remember this time.)

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